# ATTACHMENT 3

# VE20-051

# Additional Corrosion Protection Plan

## Option 1

## ITS 6607 for Reference Only

Massachusetts Bay Transportation Authority

NEW FLYER

# INSTRUCTION TO SERVICE

| ITS: 6607 | |
|---|---|
| **SECTION:** | 400 Structures |
| **WRITTEN BY:** | Jeff Kosheluk |
| **SUBJECT:** | Rework corrosion issues on the underbody and A/C compartment. This will include removing debris buildup on outer lower tubes, rust staining, lower impact panel bracket corrosion (depending on property) and applying Krown T-40 inside the tubes on the underbody chassis. This would include the use of Salt Eliminator. |

# ITS 6607

## PROCEDURE:

1. Turn the main battery disconnect switch to the "OFF" position.
2. Raise coach in accordance with the New Flyer Service Manual.
3. Once bus is raised, install stands below jacking pads at the 4 places on the underbody.

**PART A: REMOVAL OF IMPACT PANELS (IF BUS IS EQUIPPED WITH IMPACT PANELS)**

4. For buses that have impact panels, the impact panels will need to be removed and set aside. Remove hardware. Use new hardware if damaged or stripped otherwise use existing hardware. Remove on both sides of the buses.

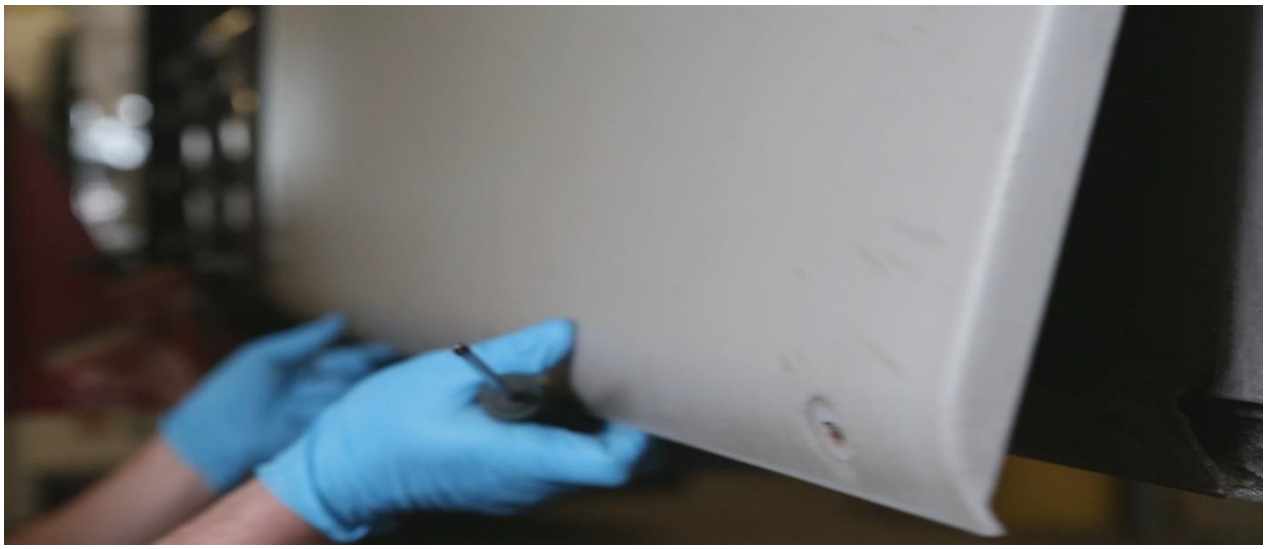


**FIGURE 1: SHOWN IMPACT PANELS BEING REMOVED.**

5. Once impact panels removed, inspect to see if debris is inside the channels of the impact brackets. See Figure 2 below showing a typical image with debris inside the channel.

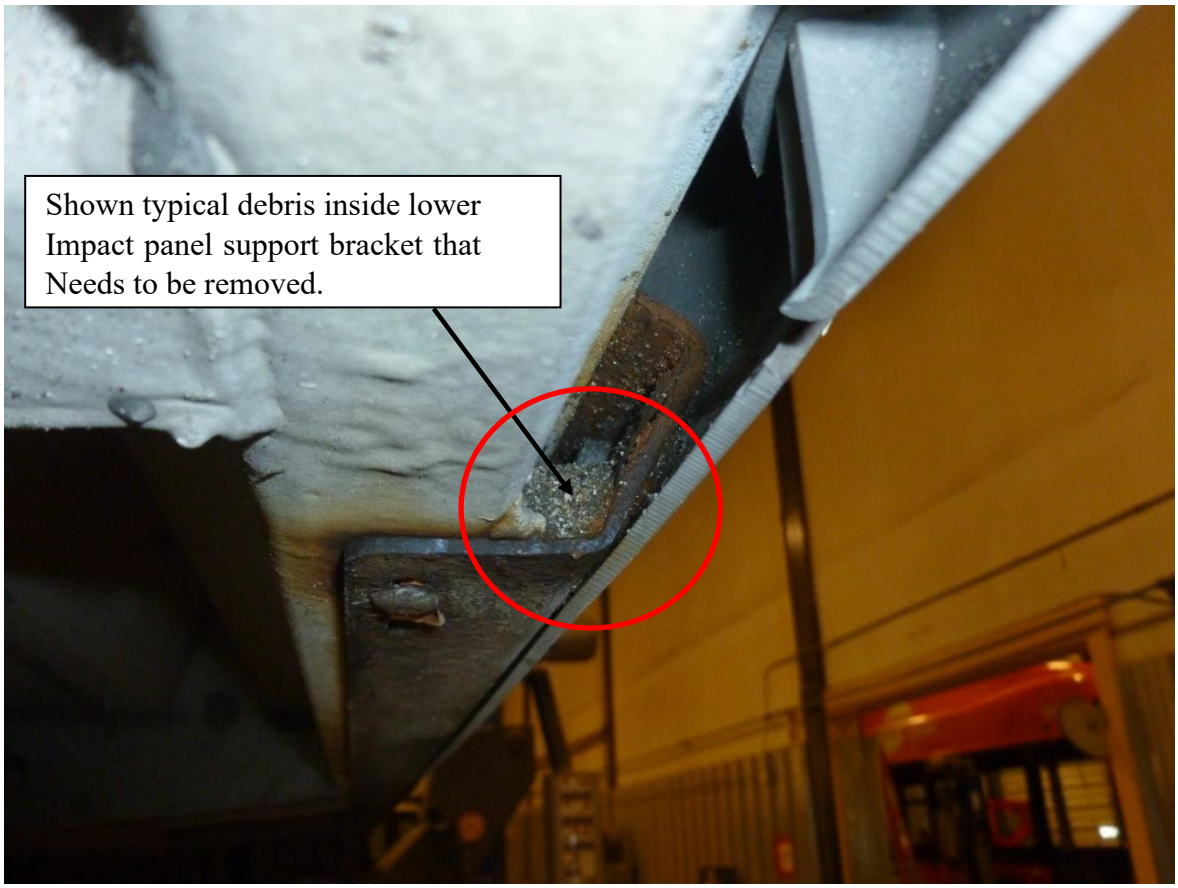



**FIGURE 2: TYPICAL VIEW OF DEBRIS INSIDE OF LOWER IMPACT MOUNTING CHANNEL.**

6. Remove all loose scaling and debris on the outside of the lower mounting impact panel brackets – Figure 2A. Use an Air Needle De-Scaler on the outside surface to remove all loose scaling. Refer to Figure 2B showing tool. **Note:** Only brackets with heavy surface scaling will use the de-scaler tool.

**FIGURE 2A: DEBRIS BUILDUP ON LOWER IMPACT PANEL BRACKET.**

**FIGURE 2B: AIR NEEDLE DE-SCALER USED ON OUTSIDE SURFACE OF LOWER IMPACT MOUNTING BRACKET**

7. Repeat step 6 on the outside of all lower impact mounting brackets. Only if heavy scaling exists as shown as per Figure 2a.
8. Using a ½" drill bit, using lubricant while drilling, use the pilot hole as a reference and drill through the structure tube at both sides of the fender wells. As well drill ½" diameter holes at the bottom of the outer tube at the locations shown on both the curbside (x6) and street side (7 per side). Use low speed drill with a ½" unibit. Pilot hole may be needed to be drilled. Do not remove any fender hardware. Fenders stay on and the hole can be drilled with the fenders on. Reference Figure 3.

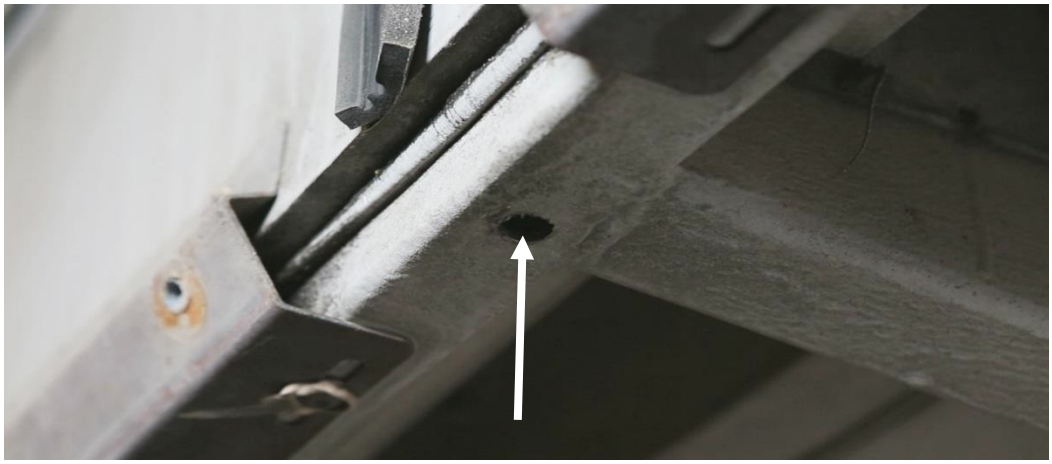
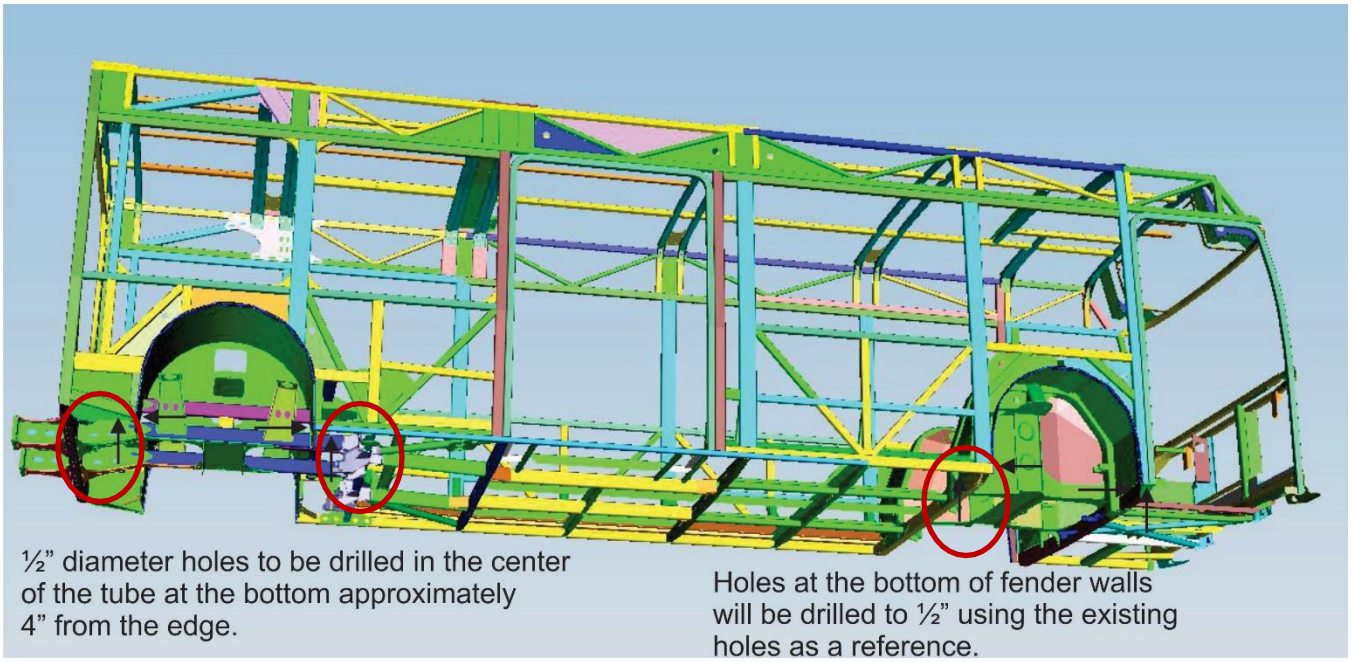
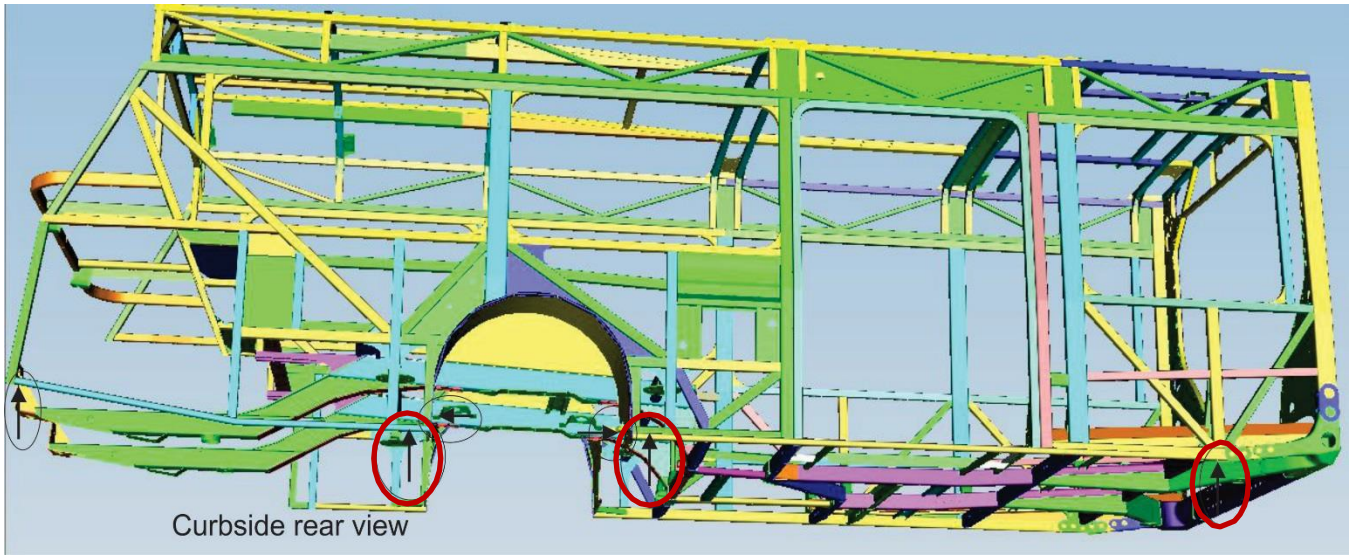


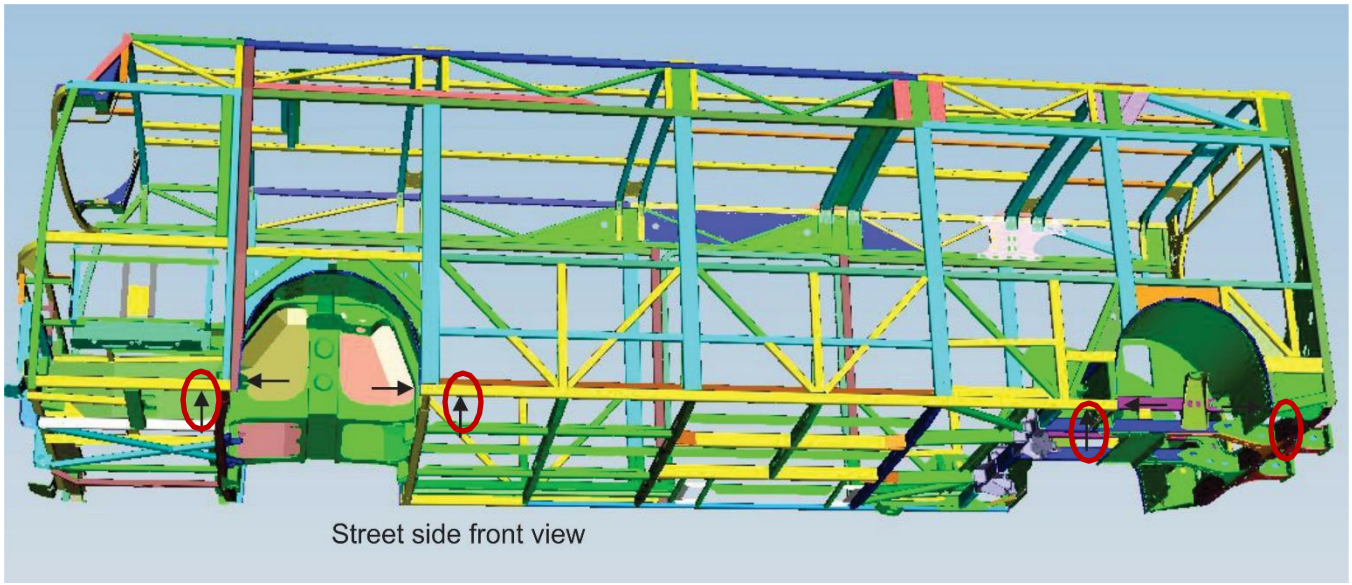
**FIGURE 3: SHOWN ½" HOLE DRILLED AT THE BOTTOM OF THE TUBE DIRECTLY AT THE VERTICAL TUBE GOING UP.**




***Curbside front view of bus***




***Curbside rear view of bus***




***Street side front view of bus***

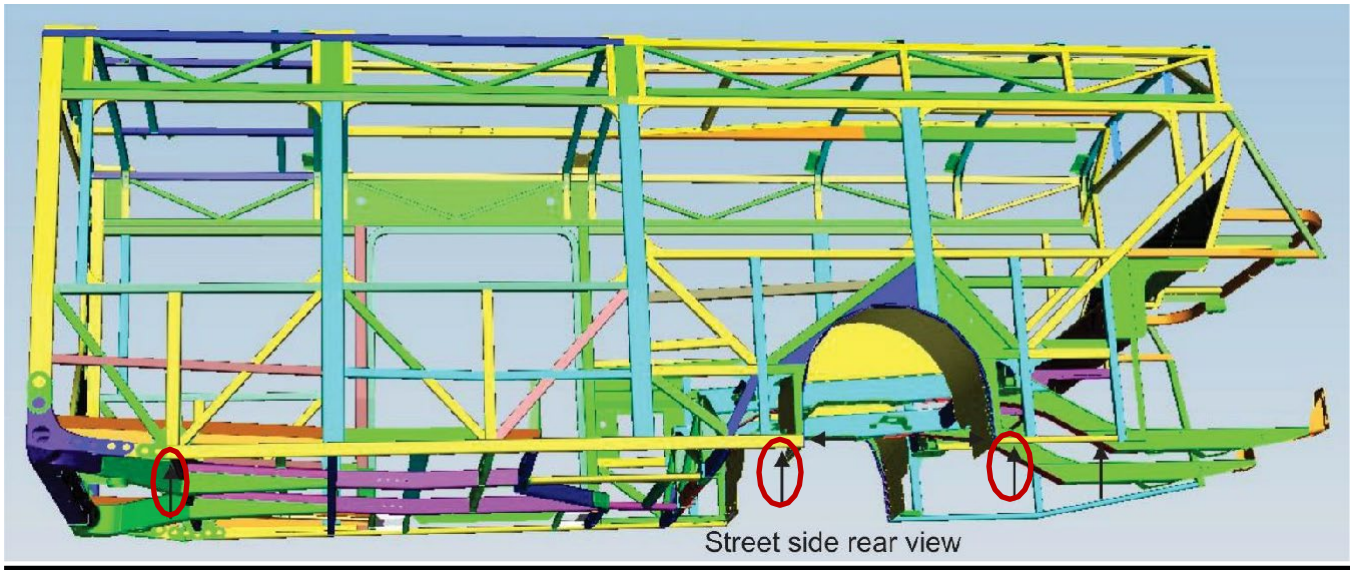



**FIGURE 4: SHOWN TYPICAL HOLE LOCATIONS ON THE STREET SIDE & CURBSIDE ONLY HOLES BEING DRILLED ARE CIRCLED.**

**Removal of chassis debris & road grime**

9. Blow off and remove all debris and road salt from the underbody. This also includes the area inside the engine compartment (underside only). Refer to Figure 4 showing some examples of debris to be removed. Pressure wash underbody chassis as well to remove heavy debris and dirt.
10. Open up the bellow area at the bottom of the artic joint area. Follow the instructions per the service manual to open up the bellows. Inspect the area for rust and debris. Blow out any debris with shop air. Leave the bellows open until the T-40 has been sprayed.

**FIGURE 4A: SHOWING TYPICAL EXAMPLES OF ROAD DEBRIS/SALT THAT NEEDS TO BE REMOVED.**

**Surface Degreasing:**

11. Degrease the entire underbody chassis, contaminated with salt/dirt/grease and or oil (for example around air dryer, axles, hydraulic reservoir, etc). Use mineral green or equivalent degreaser and pressure wash to remove contamination. Follow local regulations when disposing water contaminated with oil and grease.
12. Ensure that all drain holes at the bottom surface of the underbody tubes are clean so they are allowing for drainage. Flush out tubes with water that are plugged.

**Rust Stain Removal:**

*Apply Krown Enviro Solve*

*Note: For application of the Krown Enviro Solve, refer to Appendix C for application and MSDS sheets.*

13. For areas showing rust stains (around drain holes, bracket edges, etc), use a spray bottle to apply the Enviro Solve to the rust stain. Let sit for 60 seconds and scrub with a firm brush. The rust stain should come right off. If the rust is deep into the metal you may need to repeat this step a second time. Refer to Figure 5.

**FIGURE 5: SHOWN APPLICATION OF THE KROWN ENVIRO SOLVE APPLIED, ABSORB FOR A 1 MINUTE AND THEN SCRUBBED OFF AS SHOWN. RINSE WITH WATER AND LET DRY.**

## Krown Salt Eliminator Application

*Note: For application of the Krown Salt Eliminator, refer to Appendix A for application and MSDS sheets.*

14. Clean the entire underside with Krown Salt Eliminator chloride cleaner. Can be sprayed with a foam cannon or sprayer that is attached to a pressure washer. When spraying salt eliminator inside the tubes, plug the holes and allow the product to remain inside the tubes for 15 minutes to break up/loosen any material inside the tubes. The plugs will be pulled when rinsing out the inside of the tube with water. Rinse out the inside of tubes with warm water (preferred); cold water can be used as well. Rinse off the underbody. If dirt/debris still exist after first application, repeat process on affected areas. This will also include the area inside the artic joint from below. See Figure 6.

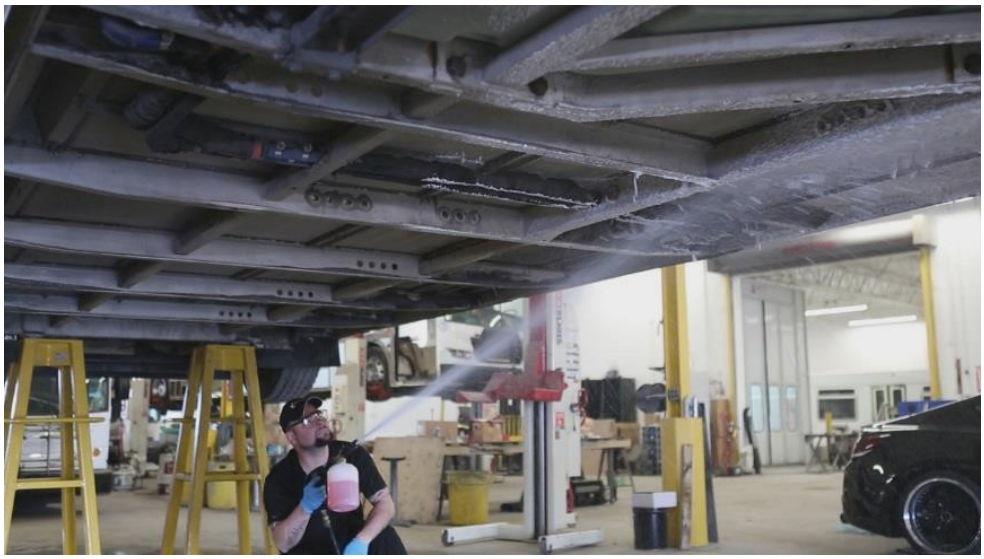


**FIGURE 6: SALT ELIMINATOR APPLIED TO THE UNDERSIDE OF THE BUS.**

***Flush tubes with Krown Salt Eliminator***

15. Typically this is what you would see inside the tubes before they are cleaned out. This is seen when using a boroscope. Refer to Figure 7.

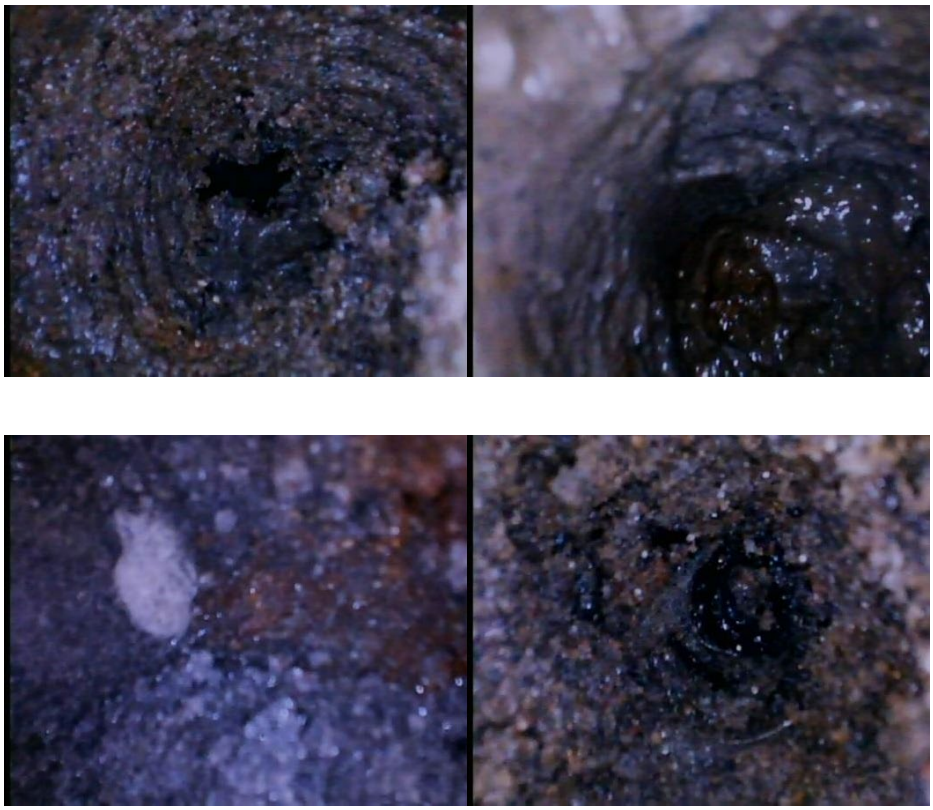
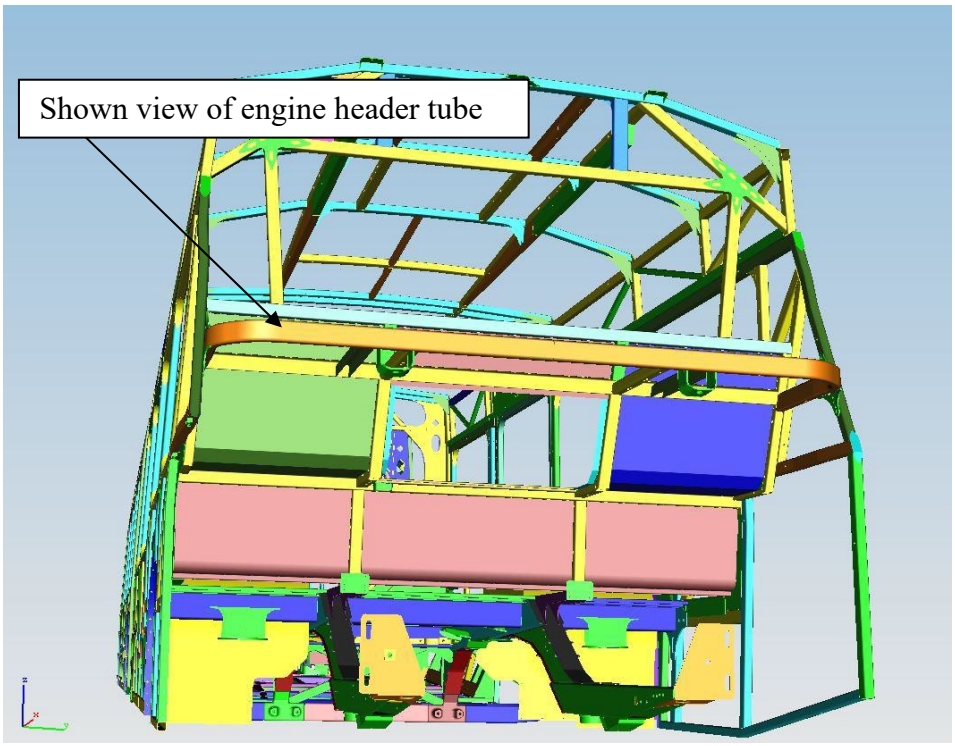


**FIGURE 7: SHOWN THE DEBRIS/CORROSION INSIDE THE TUBES BEFORE TUBES ARE CLEANED AND FLUSHED OUT.**

16. Flush the inside the tubes thoroughly with Krown Salt Eliminator (using a foam gun). This will be done to remove debris from the outer lower tube on both sides of the bus. This application maybe required to be completed a couple times till all debris is removed. All the inside tubes will only need this application done once. Refer to Figure 8.

    **Note:** *This will also include the engine header tube in the engine compartment. This must be flushed out as well. Refer to figure 9.*


**FIGURE 8: APPLICATION OF SALT ELIMINATOR BEING APPLIED INSIDE TUBES TO FLUSH OUT DEBRIS AND CALCIUM BUILDUP**



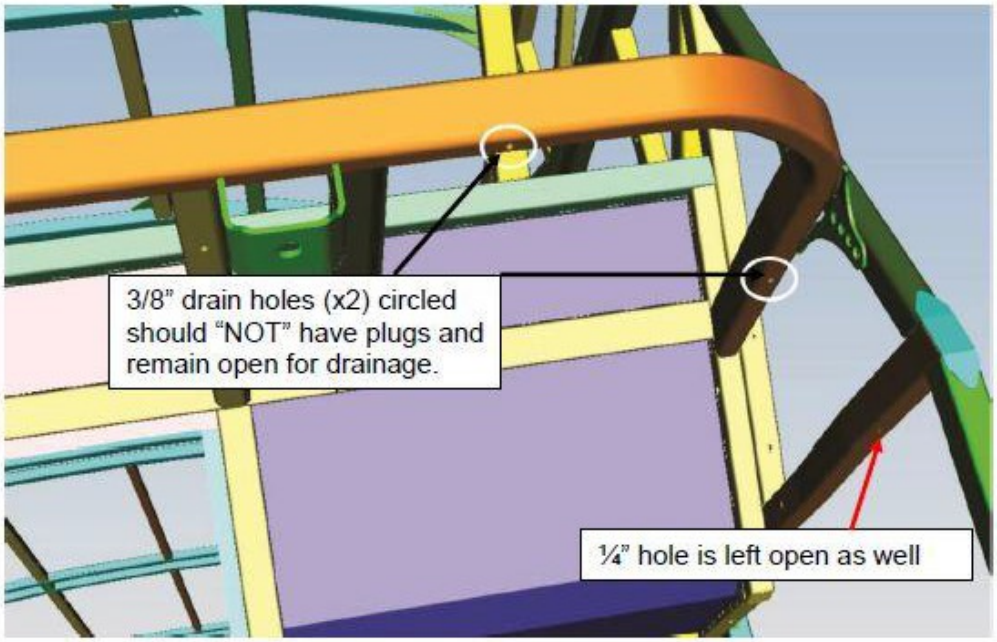




**FIGURE 9: SHOWN (X4) DRAIN HOLES. TYPICAL ON BOTH SIDES. TUBE WIL BE FLUSHED OUT AND THEN APPLIED WITH T-40 KROWN.**

17. As the material is flushed out you will see dirt, debris, rust scale etc. coming out of the tubes with the water. You will insert the plastic tubing into each hole and flush the material backwards and forwards multiple times to ensure proper cleaning. Refer to Figure 10.

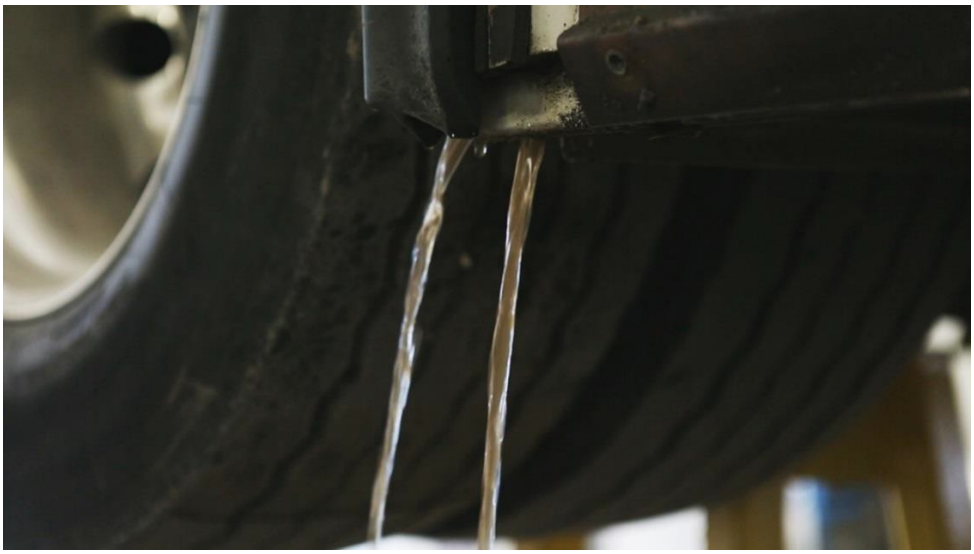


**FIGURE 10: SHOWN DIRT AND DEBRIS COMING OUT WITH WATER WHEN FLUSHING OUT TUBES**

18. You should expect to see clear water coming out from all of the holes once the application of the salt eliminator is applied correctly and feel confident that the tubes are free from the dirt/other debris that was plugging them up. Refer to Figure 11.

**FIGURE 11: WHEN WATER COMES OUT CLEAR, THIS IS A GOOD INDICATION THAT DEBRIS AND CALCIUM HAS BEEN REMOVED FROM THE INSIDE OF THE TUBES**

**FIGURE 11A: VIEW OF CLEAR WATER COMING OUT OF THE TUBE.**

19. Shown picture views of what the tube surface will appear like once salt eliminator has been applied onto the surface and rinsed off. Refer to Figure 12.

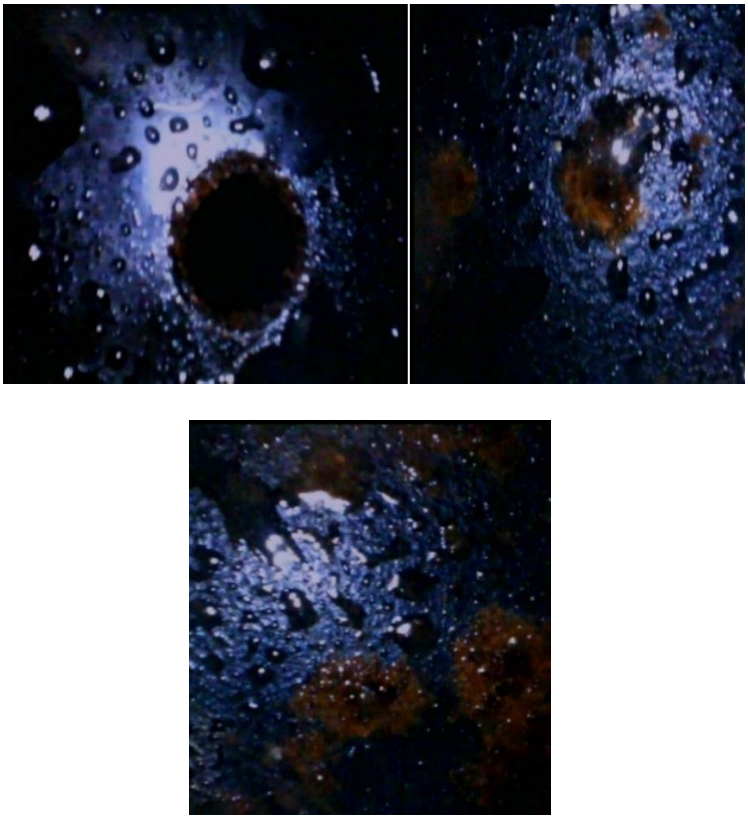


**FIGURE 12: SHOWN SURFACE AFTER SALT ELIMINATOR APPLIED AND FLUSHED WITH WATER.**

***Clean side panels/lower impact panel brackets with Salt Eliminator***

20. Foam the Salt Eliminator on to the panels and brackets/rails. Let sit for 10 minutes. Flush with water to remove chlorides, dirt and grease that has accumulated. Refer to Figure 13.


**FIGURE 13: SHOWN THE APPLICATION OF THE SALT ELIMINATOR SPRAYED ON THE PANELS AND LOWER IMPACT PANEL BRACKETS/RAILS.**

***Rinse side rails/brackets and underside of bus***

21. Wash the entire underside of the bus and inside of tubes as specified. Refer to Figure 14.
22. Let the underbody dry before continuing the repair process. Compressed air can be used to blow off water and dry the surface.

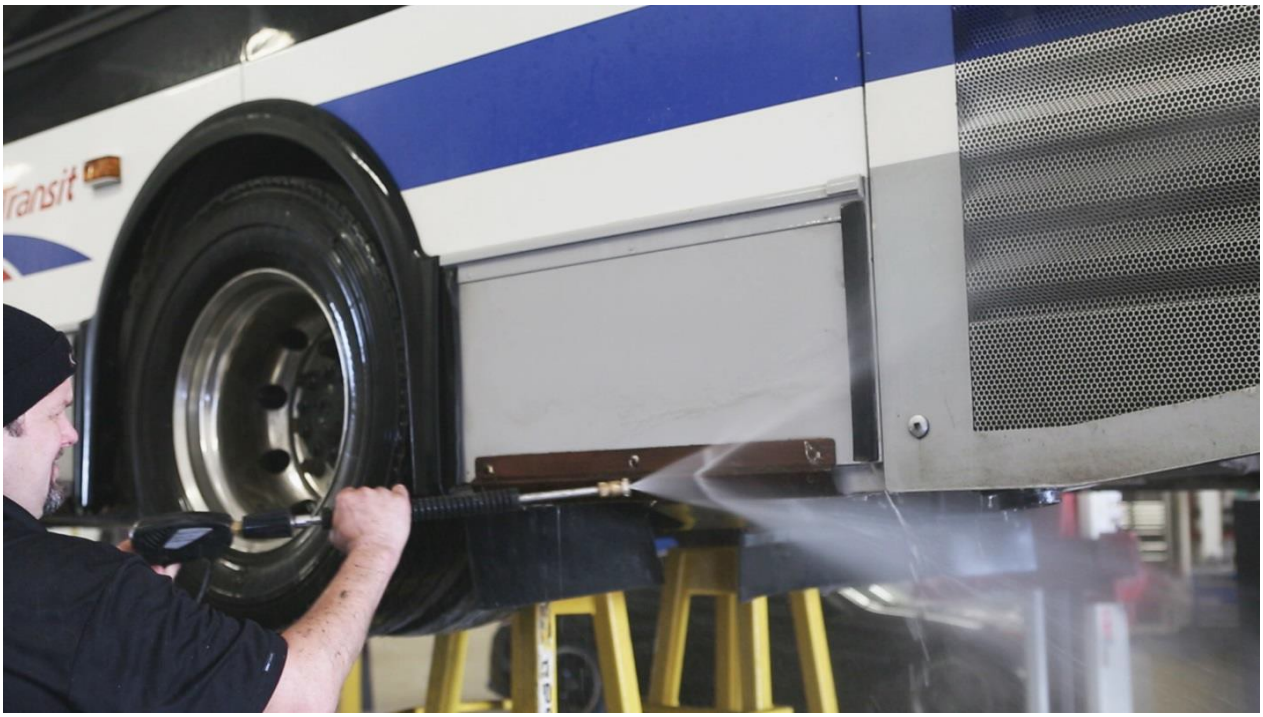



**FIGURE 14: PRESSURE WASH UNDERSIDE OF BUS TO REMOVE SALT ELIMINATOR**

***Note: For application of the Zinc Primer and Undercoating, refer to Appendix D & E for application and MSDS sheets.***

***Apply zinc primer and undercoating at affected areas (when dry) only on bare surfaces (not rusted) and areas that are only missing undercoating.***

23. Inspect the plastic plugs on the underbody chassis. Check to see if cracked, shrunk or missing. If so, the plugs need to be replaced. If new plugs are required, 9/16" plug **(PN: 6469822),** 7/16" plug **(PN: 6469821)** or 1.09" plug **(PN: 6469823)**. Refer to Figure 15.

    If you see plugs that are full of debris, they must be blown and cleaned out. Ensure there is no cracks in the plug. See below for example.

**Plug to be cleaned out & inspected for cracks**

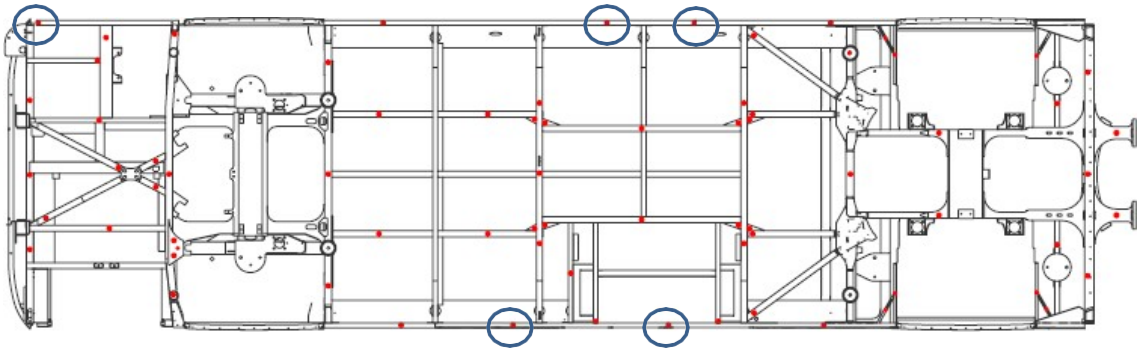
**Shown example of cracked or broken plug**

For Drain holes, use **ETV-6 (PN: 6469822) & ETV-4 (PN: 6469821)**

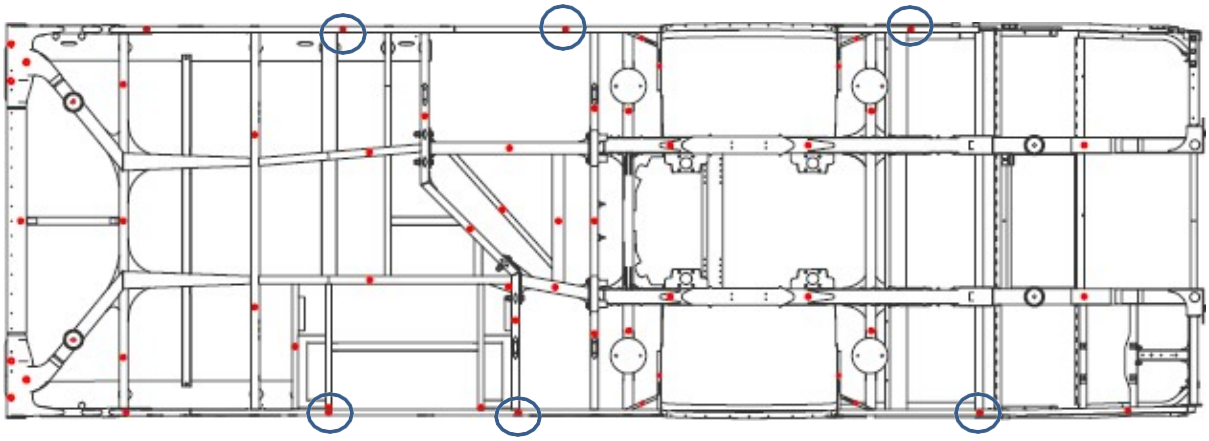
Holes thru the vertical side on header tubes, use **TV-13 (PN: 6469823)**


**FIGURE 15: SHOWN THE PLUGS TO BE USED**

Front Chassis:



Rear Chassis:



***Drain holes (shown in red)***

Xcelsior ***60 foot*** chassis – standard

Suggested to leave **11 holes open** (circled) and plug remaining holes on the chassis.

24. For areas that have bare metal, zinc primer should be re-applied. Brush on and let dry. After zinc primer applied and dry, apply undercoating over top. Apply 2 – 3 light coats. Other areas that undercoating has come off due to road wear must be touched up as well. Refer to Figure 17.

**FIGURE 17: SHOWING ZINC PRIMER APPLIED**

**FIGURE 17A: SHOWING UNDERCOATING APPLIED (WHITE AREAS)**

## For Rusted Structure Areas

**Note: IF this is not applicable – no rusting (skip this step)**

25. Remove heavy corrosion from the affected surface. Use electric/air de-scaler and or grinder first then the 36G abrasive wheel. Use different size and shape of wire wheels as required. A light sanding is done to remove any loose material & rust (level out any profile areas to as smooth as possible). This is done for proper adhesion to the surface.

**Note:** *Only the heavy scaling should be removed and do not need to remove all the rust because the*

*corrosion products need to be absorbed into the surface to properly treat the surface.*

26. Degrease affected surface with mineral green or equivalent degreaser. Rinse with water & dry off with compressed air.
27. Apply Rust Bullet to the affected corroded area. Preferably method is to use a spray gun applying light coats (2 – 3 light coats). Paint brush can be used as well. Follow application instructions in **Appendix A**.
28. After application of the Rust Bullet is completed, if there are any areas with gaps in the sealant between the structure and panels/and or plywood that have not been filled in must have sealant applied to avoid water from entering.

**Krown T-40 Corrosion Inhibitor Application:**

***Note:*** *For application of the Krown T-40 Corrosion Inhibitor, refer to Appendix B for application and MSDS sheets.*

29. Using a Krown spray system (see the appendix for equipment) the corrosion inhibitor is to be sprayed into all of the tubing on the chassis of the bus. Insert wand into the frame plug hole, push wand all the way to one end of the tube. Slowly pull back the wand hose while spraying the T-40 corrosion inhibitor. Once back to frame plug hole, push wand hose all the way in the other direction. Slowly pull wand hose back while spraying. Repeat process on every frame plug hole throughout the underbody of the bus including 24" up the vertical sidewall locations. Use borescope to inspect cavities to ensure T-40 was applied correctly. The product will be "fogged" into the tubular sections. The tubes do not need to be dry to apply the corrosion inhibitor as it will displace the moisture. The foam will dissipate and it will penetrate any rust scale to create a thin barrier on the metal to protect it. This will also include the artic joint area from below – this will be broad sprayed when the entire underbody is broad sprayed. Refer to Figure 18.


stertil

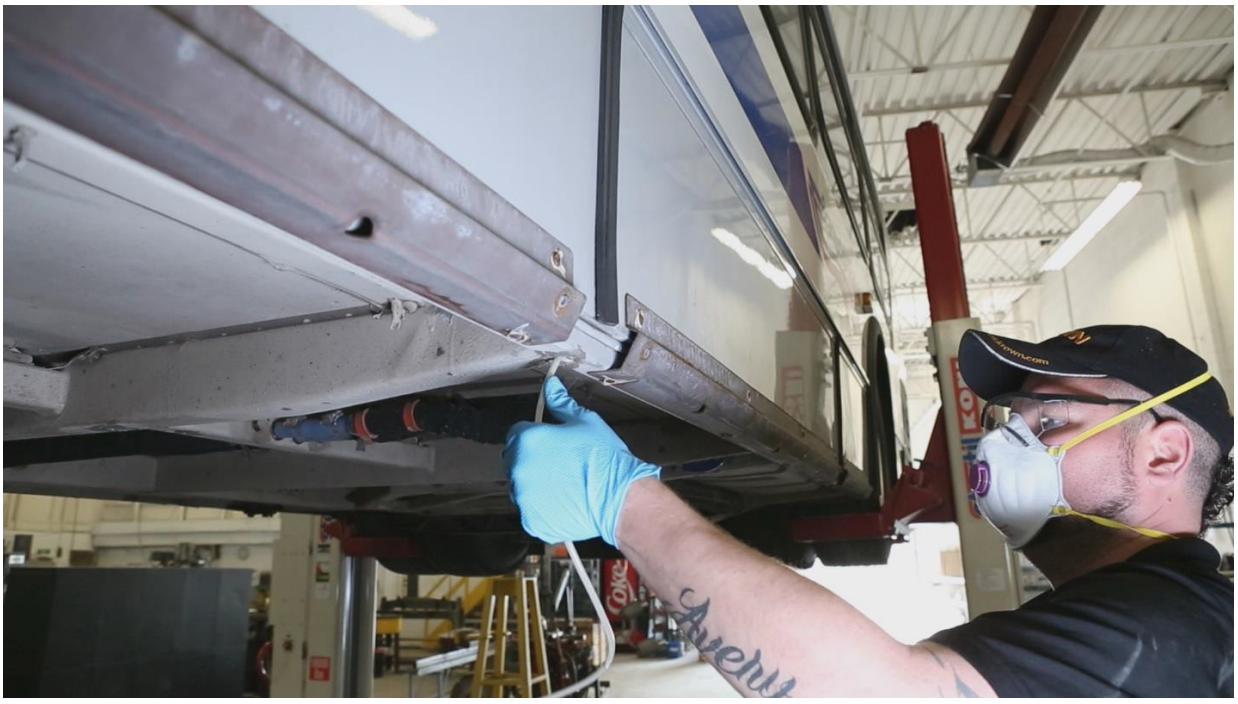


**FIGURE 18: SHOWN APPLICATION OF THE T-40 INTO THE TUBES**

30. Once the product is applied, the product will not dry up or cure. It is designed to remain viscous so as to repel moisture. The foam will dissipate, and it will penetrate any rust scale to create a thin barrier on the metal to protect it. Refer to figure 19.

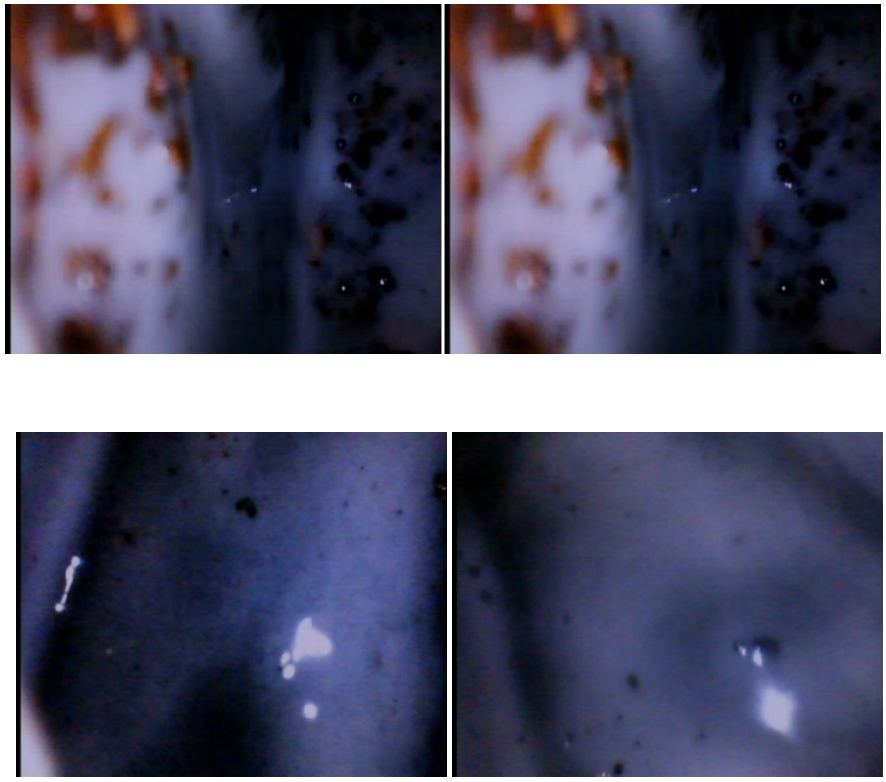


**FIGURE 19: ONCE COMPLETED THIS IS WHAT THE TUBES WILL LOOK LIKE INSIDE**

***On fittings and electrical connections***

31. Spray Krown T-40 on all fittings and electrical connections. Refer to Figure 20.

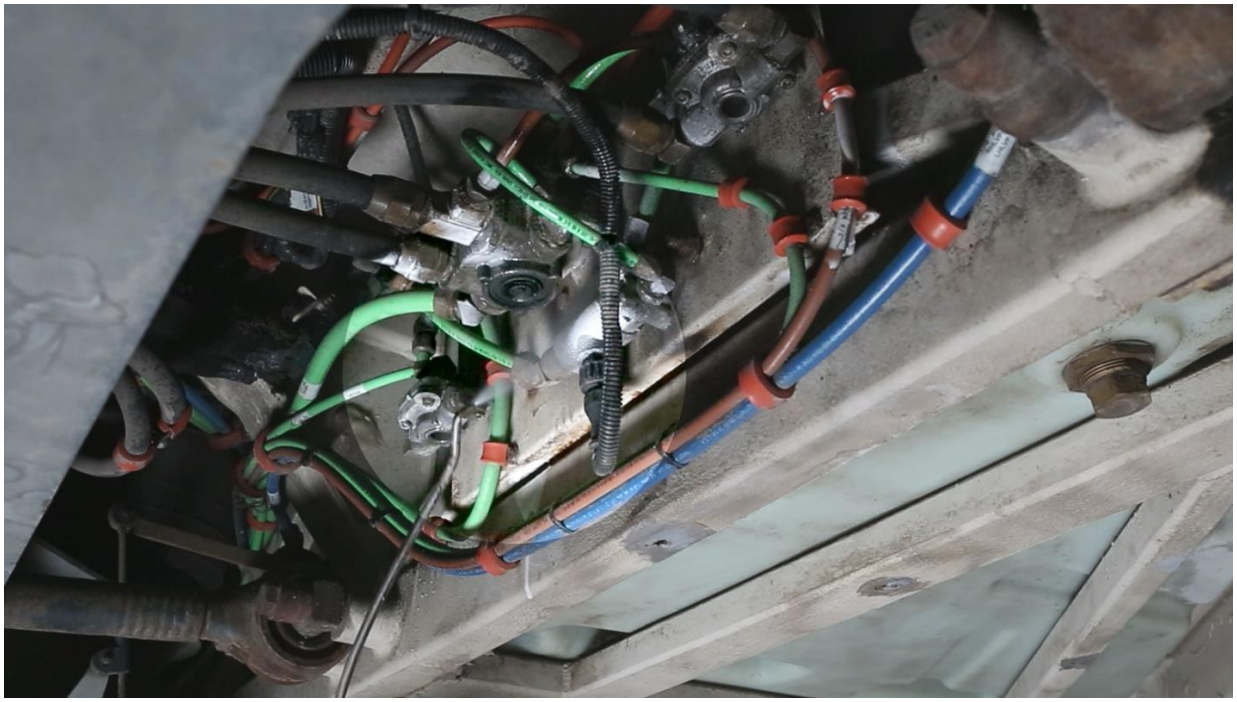


**FIGURE 20: SHOWN ELECTRICAL CONNECTIONS AND FITTINGS SPRAYED WITH KROWN T-40**

32. Spray side rails/brackets at the lower impact panels. Refer to Figure 21.

**FIGURE 21: SHOWN T-40 SPRAYED AT THE LOWER IMPACT PANEL RAILS/BRACKETS**

33. Spray the entire chassis/underside of the bus and the engine door header tube. Refer to Figure 22.

**FIGURE 22: SPRAY T-40 ON THE UNDERSIDE OF THE BUS.**

**Note:** Once the T-40 is applied on the chassis it will look "wet". It will not cover up or hide anything that is there. It will displace the moisture, protect the fittings and electrical connections as well as supplement/support the undercoating. Refer to Figure 23.

**FIGURE 23: SHOWN VIEW OF THE UNDERSIDE SPRAYED WITH T-40. "WET" LOOK IS THE FINAL PRODUCT SHOWN ON THE UNDERSIDE.**

34. Using the 9/16" plug **(PN: 6469822)** with a dab of lithium grease, install at holes and the ½" holes that were drilled toward the end of the tubes. In addition, 7/16" plug **(PN: 6469821)** can be used at certain hole locations on lower chassis.
    **Note:** **"DO NOT PLUG"** the (x4) holes on the engine header tube. They must remain open.
    **Note:** Only complete steps 34 & 35 if the buses have impact panels. Otherwise skip to step 36.
35. Install closeouts **(PN: 597554)** at the end of each impact panel bracket. Typical 34 places. Ensure the area is dry and clean for proper adhesion.
36. For buses that had impact panels removed, install new hardware (if required) **(PN: 34S00024 & 30W00000)** with never seize. Tighten all hardware.
37. Check for completeness of work. Complete inspection Level 1 sheet.
38. Remove tools, unused parts from work area and clean up debris.
39. Remove jack stand and lower the bus as per the service manual.
    **Note:** **Only trained personnel can operate lifts. Follow safety instructions written on the lift and NF Service manual.**
40. Turn the main battery disconnect switch to the "ON" position.

## *Appendix A*

## ***Quick Reference Guide to Follow for Cleaning & Application of Corrosion Products***

These are the summary notes that need to be done as part of the process. These steps are required to be followed as part of ITS 6520. Please ensure this is followed.

**Note: If working on a 60 foot Artic bus, they need to open up the bellows to inspect the area below. If debris or rust found, the area should be blown out and rust removed by either Enviro solve (if rust stains) or Rust Bullet (if rusted). Salt eliminator to be used first. The last step would be to broad spray the artic joint area (below) with T-40. If the bus is not an 60 foot bus, skip this step.**

1. **Cleaning** – In addition to notes in step 9, blow off loose dirt and debris from chassis with shop air. Degrease the entire chassis. Let sit for 15 minutes. Pressure wash and repeat process for bad areas that require a second application. For areas on the underbody that have rust staining, using a squirt bottlewith Enviro Solve (Krown), spray the area and let sit for a minute. Use a scrub brush to remove rust stain. Repeat process as required. Rinse area after with water.

2. **Reference step 13 (Enviro Solve) –** make sure this is product is washed off with water and driedoff before the application of Rust Bullet.

3. **Reference steps 14 – 21, desalt the chassis and inside the tubes –**
   When applying the salt eliminator inside the tubes, plug the holes and allow the product to remain inside the tubes for 15 minutes to break up/loosen any material inside the tube. The plugs will be pulled when rinsing out inside the tube with water. Using shop air, blow out standing water from inside the tubes.

4. **Note:** Because the Rust Bullet is being used at the affected areas, undercoating is ***"not"*** required to be applied over top. For other areas that undercoating peeled off, Rust Bullet can be applied over that area. Also, if a new tube is installed, Rust Bullet can be applied (eliminating the zinc primer andundercoating).

5. **Further details to Rust Bullet Application, please follow these steps for application:**
   a. Make sure the surface is clean and dry. Loose scaling must be removed. A light sanding is done to remove any loose material and rust (level out any profile areas to as smooth as possible).This is also done for proper adhesion to the surface.
   b. Mix the Rust Bullet using Xylene of MEK solvent (no lacquer thinner or other alcohol basedones). Maximum 10% ratio (5-10% is ideal). This must be mixed in a separate plastic container that has measurements already on it.
   c. Stir mixture for approximately 3 minutes by hand (nothing mechanical).
   d. Stitch coat (paint on with a brush – 1 to 2" brush) the Rust Bullet into all of the corners, seams and edges of brackets/plates. Brush in a single direction (not across the grain). This coatdoes not need to cure for the airless spraying of the Rust Bullet in other areas.
   e. Using an airless spray gun at 10 PSI (and with a small/fine tip) apply Rust Bullet (no morethan 100 microns wet film thickness) to the surface. Would be equivalent to 4 swipes (light mist) between

coats. Spray from a distance of 8 to 10".

*f.* ***Rust Bullet cure time is 2 – 4 hours. Application temperature must be between 50 and 80 degrees F. Once it is dry to touch with a glove you can apply the second coat. Two stitch coats and 3 spray coats are required.***

6. If there is an area that does require re-sealing, it must be done after the Rust Bullet is applied. Do not spray the area with T-40 that was recently re-sealed.

7. **Reference Step 29 - 33 (Krown T-40 tube application):**
   Make sure the tubes are generously coated/sprayed.

8. Re-plug underbody chassis plugs.

## *APPENDIX B*

### *KROWN SALT ELIMINATOR – APPLICATION SHEET*

# KROWN Salt Eliminator

The Krown Salt Eliminator chloride wash is a cleaner designed to help fight corrosion that is caused by magnesium, calcium, and sodium chloride salts. Its unique formula allows the product to break the bond formed between the chloride and the metal. Salt Eliminator creates a water repelling surface that not only leaves a beading shine to the vehicle but also helps slow salt from reforming on the surface. Salt Eliminator doesn't contain any phosphates or petroleum solvents and is safe to use to remove salt stains from carpets, upholstery, plastic, leather and vinyl. Krown Salt Eliminator is an environmentally friendly product.

The product can be applied using the following methods:

- Foam Cannon/Gun
- Pressure Washer
- Trigger or Pump Sprayers
- Automatic Bus Wash Systems
- Underbody Wash Systems

*For specifics of the application and dilution rates, as it relates to the equipment used to apply the product, please contact Krown's Technical department for assistance.*

**Areas of Application**

- Interior desalting of bus floors
- Exterior washing of equipment
- Underbody de-salting
- Interior tube cleaning
- Chloride removal form radiators and electrical components

**Directions for Use**

Salt Eliminator is to be foamed on to the surface using any of the above mentioned methods. The Salt Eliminator will dwell on the surface for at least 1 minute (*more time will be needed depending upon the application requirement.*) The product will then be rinsed off with water.

The product can be used with either hot or cold water. No special personal safety equipment is required for use.

Further product information and a current MSDS is available on Krown's web site at www.krown.com

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(905) 939-8750 tel (905) 939-8710 fax
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KROWN

BUS

# SALT ELIMINATOR

**An advanced formula designed to break the bond formed between metals and road salts or deicing chemicals.**

## Areas of Application

- Vehicle & equipment salt removal
- Salt-spreading equipment
- Automatic and self-serve carwashes
- Interior Desalting
- Equipment washing

## Methods of Application

- Foam Guns*
- High Pressure Wands
- Pressure Washing
- Vehicle Wash Systems
- Wash Bucket
- Trigger & pump-up sprayers

** Ask about Krown's High Pressure Foaming Cannon.*

## Directions For Use

1. Dilute Equipment Wash to the desired ratio.

| | |
|---|---|
| *Foaming Presoak:* | Dilute 50:1 - 75:1 |
| *Underbody Wash:* | Dilute 20:1 – 45:1 |
| *High Pressure Wand:* | Dilute 50:1 - 75:1 |
| *Wash Bucket:* | Dilute 200:1 – 250:1 |
| *Trigger Sprayer:* | Dilute 3:1 – 5:1 |

## Features & Benefits

***Helps Fight Corrosion***
Calcium. magnesium, and sodium chlorides greatly accelerate the corrosion process. Salt Eliminator is specifically formulated to remove these harmful chlorides from vehicles and equipment.

***Repels Moisture***
Salt Eliminator creates a water repelling surface that not only leaves a beading shine to the vehicle but also helps slow salt from reforming on the surface.

***Environmentally Friendly***
Salt Eliminator doesn't contain any phosphates or petroleum solvents.

***Safe on any Surface***
Salt Eliminator can be used to remove salt stains from carpets, upholstery, plastic, leather and vinyl.

**All Krown products are NPE/APE free.*

## Order Number & Sizes

**Aerosol** 6465146 **4L** 6465147
**20L** 6465148 **205L** 6465149

KROWN

*Automatic Bus Wash Systems*

*Foam Gun* *#6465156*

*Foam Cannon* *#6465157*

*Soap Dispenser* *1 Gal. per sec. #6465158* *4 Gal. per sec. #6465159*

*Trigger Sprayer* *#6465160*

*Foam Brush* *#6465161*

***The highlighted accessories are designed to work along with Krown Salt Eliminator to save time and provide unparalleled results. Please use all Krown products with the appropriate safety gear.***

*Contact Krown At:*
sales@krown.com

*MSDS information available at www.krown.com*

# *APPENDIX B*

***KROWN SALT ELIMINATOR – MSDS SHEET***

# MATERIAL SAFETY DATA SHEET
# KROWN SALT ELIMINATOR

## 1. PRODUCT AND COMPANY INFORMATION

Krown
35 Magnum Drive
Schomberg, ON L0G 1T0

USE: Salt Remover
PHONE: 1 800-267-5744
CHEMICAL FAMILY: Blended Product

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

| HAZARDOUS INGREDIENT | | %W/W | PIN/CAS# | LD50/LC50 | ROUTE/SPECIES |
|---|---|---|---|---|---|
| Ethylene glycol monobutyl | | 1-5 | 111-76-2 | LD50 1746 mg/kg | oral, rat ether |

## 3. HAZARDS IDENTIFICATION

EFFECTS OF ACUTE EXPOSURE TO MATERIAL: EYES: Concentrate can cause irritation to eye tissue SKIN: Can cause skin irritation. May cause drying of skin. INGESTION: Harmful if ingested

EFFECTS OF CHRONIC EXPOSURE TO MATERIAL: May cause drying of skin
PRIMARY ROUTE OF ENTRY: [ ]-Inhalation [ X ]-Ingestion [ ]-Absorption OTHER TOXIC EFFECTS: None known

## 4. FIRST AID MEASURES

EYES: Flush eyes with plenty of water for at least 15 minutes. Hold eyelids open while rinsing. Contact a physician immediately
SKIN: Flush affected area thoroughly with water. Seek medical attention if irritation persists INGESTION: Rinse mouth with water. Drink large volumes of water. Do not induce vomiting. Never give anything by mouth to an unconscious patient. Contact a physician immediately INHALATION: Remove patient to fresh air.

## 5. FIRE FIGHTING MEASURES

FLAMMABLE: NO
FLASH POINT, CELSIUS: Not Applicable
AUTO IGNITION TEMPERATURE, CELSIUS: Not Applicable
EXTINGUISHING MEDIA: Water Fog, Dry Chemical, $CO_2$ , Foam
SPECIAL FIRE FIGHTING PROCEDURES: appropriate to surrounding fire

HAZARDOUS COMBUSTION PRODUCTS: Oxides of carbon, hazardous fumes EXPLOSIVE SENSITIVITY TO: Not Applicable

## 6. ACCIDENTAL RELEASE MEASURES

SPILL PROCEDURE: SMALL: Hose down with water
LARGE: Soak up with absorbent material and hold for disposal

## 7. HANDLING AND STORAGE

SPECIAL HANDLING PROCEDURES AND EQUIPMENT: Wear gloves if handling concentrated product. Avoid contact with skin and eyes. Do not take internally.
STORAGE REQUIREMENT: Avoid freezing. Store in a cool dry area in a closed container.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT:
GLOVES: Impermeable Gloves EYE PROTECTION: Safety Goggles
FOOTWEAR: Water Resistant OTHER: Not required
RESPIRATORY PROTECTION: Not required for normal use VENTILATION REQUIREMENTS: Local Ventilation

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|---|---|---|
| APPEARANCE: | orange/red product; fruity/citrus odour | S.G. / DENSITY (g/cc): | 1.017 |
| PH: (Concentrate): | 4.1 | VAPOUR PRESSURE (mmHg): | not established |
| VAPOUR DENSITY (air=1): | not established | BOILING POINT: | 100°C |
| FREEZING POINT: | 0°C | EVAPORATION RATE (water=1): | >1 |
| SOLUBILITY IN WATER: | Excellent | | |

## 10. STABILITY AND REACTIVITY

INCOMPATIBILITY (Material to Avoid): Sodium Hypochlorite; Peroxide
STABILITY: Stable INCOMPATIBILITY: Strong acids and oxidizing materials
HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon, hazardous fumes
HAZARDOUS POLYMERIZATION: Not applicable REACTIVITY: Not dangerously reactive

## 11. TOXICOLOGICAL INFORMATION

LD50 (Calculated): 3860 mg/kg (Oral/Rat) LC50 (Calculated): Not established

## 12. ECOLOGICAL INFORMATION

SPILL PROCEDURE: Pick up with mop or wet-vac.
WASTE DISPOSAL: Dispose according to municipal, provincial, and federal regulations

## 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Dispose according to municipal, provincial, and federal regulations

## 14. TRANSPORT INFORMATION

TDG: Not Regulated

## 15. REGULATORY INFORMATION

WHMIS CLASS: Not a WHMIS controlled product
CPR Compliance: This product has been classified in accordance with hazard criteria of the CPR and this MSDS contains all the information required by the CPR

## 16. OTHER INFORMATION

PREPARED BY: J. Brideau (800)267-5744
PREPARATION DATE: February 17, 2012
AMMENDED: February 13, 2015

Notice:
To the best of our knowledge, the information contained in this document is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Some of the information presented in this document is from sources other than direct test data on the substance itself. As the methods of storage and handling, use, and disposal of the product are beyond our control, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with storage and handling, use, or disposal of this product.
Final determination of suitability of this material is the sole responsibility of the user. Materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

# *APPENDIX C*

***KROWN T-40 CORROSION INHIBITOR – APPLICATION SHEET***

# KROWN T- 40 CORROSION INHIBITOR

The Krown T-40 is an Industrial strength Corrosion Inhibitor/Lubricant designed to protect metal surfaces and tubing. It is safe for use on electrical components and is an environmentally friendly product. The product is non-toxic and contains no solvents.

The product can be applied using the following methods:

- Aerosol can
- Pot Spray System
- Pressure Pot System
- Pumping System

*For specifics of the application, as it relates to the equipment used to apply the product, please contact Krown's Technical department for assistance.*

Krown T-40 is best applied when the product is heated. It is optimal to have the product at a temperature of 140 degrees F.

Make sure the surface is clean prior to application of Krown T-40. It is preferable to clean the surface with Krown Salt Eliminator (*Chloride cleaner*) prior to application. The surface does not need to be dry prior to the T-40 application as the product will displace moisture. The product when applied will remain wet and is not intended to "set up". It will create a thin barrier to repel moisture.

It is recommended that an approved NIOSH mask be worn when applying the product (in any mode, with the exception of an aerosol.)

After application any excess product (overspray) or product that may be left on the shop floor can easily be cleaned up using a degreaser.

Further product information and a current MSDS is available on Krown's web site at www.krown.com

**KROWN CORPORATE**

35 Magnum Drive, Schomberg, Ontario (Canada) L0G 1T0
(905) 939-8750 tel (905) 939-8710 fax

www.krown.com

**KROWN CORPORATE**

KROWN

BUS

# RUST PROTECTION & LUBRICANT

**A petroleum-based corrosion inhibitor designed to create a long-lasting, self-healing barrier between metal and water.**

Krown is a manufacturer of Penetrants, Lubricants, Corrosion Inhibitors and Cleaning Maintenance Products. We manufacture products for agriculture, automotive, bus, and trucking OEMs. Krown's products are used annually as part of preventative maintenance programs with municipal and private fleets across North America

## Features & Benefits

***Displaces Moisture***
When applied to a metal surface, Krown bonds to the metal, lifting water off the surface and creating a strong, self-healing barrier. This creates a lasting protection against rust.

***Protects Electrical Components***
With a dialectric strength that exceeds 50Kv, Krown can be directly applied to electrical componets, sealing out water and preventing corrosion.

***Environmentally Friendly***
Krown's Rust Protection formula is not WHMIS controlled and contains no solvents or VOCs.

## Areas of Application

- Steel Frame and Tubing
- Electrical Wiring & Connections
- Hinges & Locks
- Moving Parts
- Chains

## Methods of Application

- Pump & Gun System
- Aerosol Can
- Pressure Pot System
- Portable Pot System

## Directions For Use

1. Throughly clean area of application to remove chlorides and salts with ***Krown Salt Eliminator.***
2. Krown Rust Protection is best applied when the product is heated to 140 degrees F.
3. It is recommended that an approved NIOSH mask be worn when applying the product (in any mode, with the exception of an aerosol.)
4. Mist product evenly over surface, until it appears "wet", too much overspray will lead to excessive dripping and product loss.
5. Clean up excess product (overspray) from shop floor with a degreaser.

## Order Number & Sizes

**Aerosol** 6465138 **4L** 6465139
**20L** 6465140 **205L** 6465141

## Contact Krown At:

sales@krown.com
www.krown.com

KROWN

**These accessories are designed to work along with Krown Rust Protection to save time and provide unparalleled results. Please use all Krown products with the appropriate safety gear.**


*Aerosol Can* *#6465138*

*Pump & Gun System* *#6465153*

*Pot Spray System* *#6465154*

*Pressure Pot System* *#6465155*

***Krown Rust Protection is designed to protect the bus chassis, tubular structure and electrical components.***

*MSDS information available at www.krown.com*

# *APPENDIX C*

***KROWN T-40 CORROSION INHIBITOR – MSDS SHEET***

## CANADIAN KROWN DEALERS INC.
## MATERIAL SAFETY DATA SHEET

# KROWN T-40

Date Prepared: January 5, 2015
Supersedes: January 3, 2012

1. PRODUCT INFORMATI ON

| | |
|---|---|
| Product Identifier: | Krown T-40 |
| Application and Use: | Rust Inhibitor, lubricant |
| Product Description: | Rust Inhibitor |

---

REGULATORY CLASSIFICATION

WHMIS Information:
Not Controlled

TDG Information: Rail/Road
Not Regulated in Canada.

Canadian Environmental Protection Act (CEPA)
All components of this product are either on the Domestic Substances List (DSL) or exempt

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EMERGENCY TELEPHONE NUMBER

800-267-5744
(905) 939-8750

MANUFACTURER/SUPPLIER

Canadian Krown Dealers Inc.
35 Magnum Drive
Schomberg, ON LOG 1T0

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**2. REGULATED COMPONENTS**

The following component data is defined in accordance with sub-paragraph 13 (a) (I) to (iv) of the Hazardous Products Act.

| NAME | % (v/v) | CAS |
|---|---|---|
| None | | |

---

**3. TYPICAL PHYSICAL AND CHEMICAL PROPERTIES**

| | |
|---|---|
| Physical State: | Liquid |
| Density: (g/cc) | 0.9 |
| Vapour Pressure: (mm) | N.D. |
| Solubility in Water: | Nil |
| Boiling Point: | N.D. |
| Freezing/Melting Point: | -20°C |
| Vapour Density: (air=1) | Heavier than air |
| Evaporation Rate, n-Butyl Acetate = 1: | N.D. |
| pH: | N/A |
| Appearance: | Viscous oil; no odour |

---

**4. HEALTH HAZARD INFORMATION**

NATURE OF HAZARD

INHALATION:
High vapour/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects, including death.

EYE CONTACT:
Slightly irritating, but will not injure eye tissue.

SKIN CONTACT:
Low toxicity.
Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).
Skin contact may aggravate an existing dermatitis condition.

INGESTION:
Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause mild to severe pulmonary injury and possibly death.
Minimal toxicity.

CHRONIC:
At very high oral doses, this product caused reversible damage to the stomach, liver, and kidney (male only) of rats. These effects are not relevant to humans at occupational levels of exposure.

SPECIAL HEALTH PRECAUTIONS:

Health studies have shown that many petroleum hydrocarbons pose potential human health risks, which may very from person to person. As a precaution, exposure to liquids, vapours, mists or fumes should be minimized.

OCCUPATIONAL EXPOSURE LIMIT
5 mg/m3

MANUFACTURER RECOMMENDS:

Local Regulated limits may vary.

---

**5. FIRST AID MEASURES**

INHALATION:
In emergency situations use proper respiratory protection to immediately remove the affected victim from exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Call for prompt medical attention.

EYE CONTECT:
Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

SKIN CONTACT:
Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun.

INGESTION:
If swallowed, **DO NOT** induce vomiting. Keep at rest. Get prompt medical attention.

---

**6. PREVENTATIVE AND CORRECTIVE MEASURES**

PERSONAL PROTECTION:
The selection of personal protective equipment varies depending upon conditions of use.
Where prolonged and/or repeated eye contact is likely to occur, wear safety glasses and side shields, long sleeves, and chemical resistant gloves.
Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields.
Where concentrations in the air may exceed the occupational exposure limits given in Section 4 and where engineering, work practices or other means of exposure reduction are not adequate, approved respirators may be necessary to prevent overexposure by inhalation.

ENGINEERING CONTROLS:
The use of local exhaust ventilation is recommended to control emissions near the source. Provide mechanical ventilation of confined spaces.

ELECTROSTATIC ACCUMULATION HAZARD:
Use proper ground procedure.
Additional information regarding safe handling of products with static accumulation potential can be ordered by contacting the American Petroleum Institute (API) for API Recommended Practice 2003, entitled “Protection Against Ignitions Arising Out of Static, Lighting and Stray Currents” (American Petroleum Institute, 1220 L Street Northwest, Washington, DC, 20005), or the National Fire Protection Association, 1 Batterymarch Park, P.O. Box #9101, Quincy, MA, 02269-9101)

HANDLING, STORAGE AND SHIPPING

Keep container closed. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials.

**DO NOT** handle or store near an open flame, heat, or other sources of ignition.
Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper grounding procedures.
**DO NOT** pressurize, cut, heat or weld containers. Empty product containers may contain product residue. **DO NOT** reuse empty containers without commercial cleaning or reconditioning.

SPILL CONTROL AND DISPOSAL
Dyke and Recover. Use absorbent material. Consult an expert on the disposal of recovered material. Ensure disposal in compliance with government regulations and ensure conformity to local disposal regulations. Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill.

LAND SPILL
Eliminate sources of ignition. Keep public away. Prevent additional discharge of material, if possible to do so without hazard. Prevent spills from entering sewers, watercourses or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust.
Recover by pumping (use an explosion proof motor or hand pump), or by using a suitable absorbent.

WATER SPILL

Remove from surface by skimming or suitable absorbents. If allowed by local authorities and environmental agencies, sinking and/or suitable dispersants may be used in unconfined waters.

---

**7. FIRE AND EXPLOSION HAZARD**

| | |
|---|---|
| Flash Point and Method: | >185°C COC |
| Autoignition Temperature: | N.D. |
| Flammable Limits (Upper): | N.D. |
| Flammable Limits (Lower): | N.D. |

GENERAL HAZARDS:
Combustible Liquid; may form combustible mixtures at or above the flash point.

FIRE FIGHTING:
Use water spray to cool fire exposed surfaces and to protect personnel.
Shut off fuel to fire.
Use foam, dry chemical or water spray to extinguish fire.
Avoid spraying water directly into storage containers due to danger of boil over.
A self-contained breathing apparatus (SCBA) is recommended for indoor fires and any significant outdoor fires. For small outdoor fires, which may easily by extinguished with a portable fire extinguisher, use of an SCBA is optional.
The liquid may travel some distance along the ground or surface to ignition sources where it may ignite.

HAZARDOUS COMBUSTION PRODCUTS:
No unusual products

# *APPENDIX D*

## *KROWN ENVIRO SOLVE – APPLICATION SHEET*

# KROWN Enviro Solve

Krown Enviro Solve is a Citrus Solvent Based Cleaner/Degreaser. Made from a combination of citrus solvent, emulsifiers, and additives it is biodegradable and environmentally safe. Enviro Solve is a versatile cleaner that can be used for dissolving tar, adhesives and heavy grease. Enviro Solve contains no Petroleum Distillates.

The product can be applied using the following methods:

- Apply with a cloth
- Trigger or Pump up Sprayers

*For specifics of the application and dilution rates, as it relates to the equipment used to apply the product, please contact Krown's Technical department for assistance.*

**Areas of Application**

- Asphalt & Tar Removal
- Liquefying Crude Oil
- Metal Cleaning/rust stain removing
- Parts Washing
- Brake Cleaning
- Wall Cleaning
- Fire & Smoke Cleanup
- Adhesive Removal
- Decal Removal
- Oil Stain Removal from Fabric/Carpets
- Chewing Gum Removal

**Directions for Use**

1. Test product in an inconspicuous area before using.
2. Spray or Wipe on. Let stand for up to 10 minutes. *(It is preferable that product not be allowed to dry on surface.)*
3. Agitate with firm scrub brush in the case of rust staining.

**Remove using one of the following methods:**

1. Wipe product off with a wash mitt or cloth
2. Rinse with water

Further product information and a current MSDS is available on Krown's web site at www.krown.com

**KROWN CORPORATE**
35 Magnum Drive, Schomberg, Ontario (Canada) L0G 1T0
(905) 939-8750 tel (905) 939-8710 fax
www.krown.com

KROWN

BUS

CITRUS POWERED

# ENVIRO SOLVE


**A versatile and user-friendly citrus-solvent cleaner/degreaser.**

## Features & Benefits

***Biodegradable and Environmentally safe***
Made from a combination of citrus solvents, emulsifiers and additives. Contains no petroleum distillates.

***Powerful Cleaning***
Enviro Solve is a versatile cleaner that can be used for dissolving tar, adhesives and heavy grease.

***Safe on Most Surfaces***
Enviro Solve can be used on many different surfaces including fabrics.

***Floating Degreaser***
Liquify crude oil and greases that are floating on the water's surface by adding Enviro Solve.

*All Krown products are NPE/APE free

## Areas of Application

- Asphalt & Tar Removal
- Liquefying Crude Oil
- Metal Cleaning
- Parts Washing
- Brake Cleaning
- Wall Cleaning
- Fire & Smoke Cleanup
- Adhesive Removal
- Decal Removal
- Oil Stain Removal from Fabric/Carpets
- Chewing Gum Removal
- Removes rust bleeding and stains

## Methods of Application

- Apply with Rag
- Pump up and Trigger Sprayers

## Directions For Use

1. *Always test product in an inconspicuous area before using.*
2. Spray or wipe on.
3. Let stand for up to 10 minutes. (It is preferable that the product not be allowed to dry on the surface.)
4. Remove using one of the following methods: ***a)*** Wipe product off with a wash mitt or rag. ***b)*** Rinse with water

***Order Number & Sizes***
**4L** 6465150 **20L** 6465151 **205L** 6465152

***Contact Krown At:***
sales@krown.com

***MSDS information available at www.krown.com***

# *APPENDIX D*

***KROWN ENVIRO SOLVE – MSDS SHEET***

# MATERIAL SAFETY DATA SHEET

## ENVIROSOLVE

## 1. PRODUCT AND COMPANY INFORMATION

Krown
35 Magnum Drive
Schomberg, ON L0G 1T0

USE: D'limonene Solvent Cleaner/Degreaser
PHONE: 1 800-267-5744
CHEMICAL FAMILY: Blended Product

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT %W/W PIN/CAS# LD50/LC50 ROUTE/SPECIES D'Limonene 60-100 5989-27-5 LD50 >5000mg/kg dermal/rabbit

## 3. HAZARDS IDENTIFICATION

EFFECTS OF ACUTE EXPOSURE TO MATERIAL: EYES: May cause severe eye irritation.
May cause temporary or permanent damage if not treated promptly.
SKIN: Can cause skin irritation. May cause drying of skin.
INGESTION: Harmful if ingested

EFFECTS OF CHRONIC EXPOSURE TO MATERIAL: May cause drying of skin PRIMARY ROUTE OF ENTRY: [ X ]-Inhalation [ X ]-Ingestion [ ]-Absorption OTHER TOXIC EFFECTS: None known

## 4. FIRST AID MEASURES

EYES: Flush eyes with plenty of water for at least 15 minutes. Hold eyelids open while rinsing.
Contact a physician immediately
SKIN: Flush affected area thoroughly with water. Seek medical attention if irritation persists INGESTION: Rinse mouth with water. Drink large volumes of water. Do not induce vomiting. Never give anything by mouth to an unconscious patient. Contact a physician immediately. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. INHALATION: Remove patient to fresh air.

## 5. FIRE FIGHTING MEASURES

FLAMMABLE: Combustible liquid.
FLASH POINT, CELSIUS: 46°C
AUTO IGNITION TEMPERATURE, CELSIUS: not available

EXTINGUISHING MEDIA: Dry Chemical, Carbon Dioxide, Foam (Water is unsuitable for use on burning material, but may be used to cool containers exposed to heat.)
SPECIAL FIRE FIGHTING PROCEDURES: appropriate to surrounding fire
HAZARDOUS COMBUSTION PRODUCTS: CO, $CO_2$, Smoke and unidentified organic compounds may be formed during combustion. EXPLOSIVE SENSITIVITY TO: Not Applicable

## 6. ACCIDENTAL RELEASE MEASURES

SPILL PROCEDURE: SMALL: Hose down with water
LARGE: Soak up with absorbent material and hold for disposal

## 7. HANDLING AND STORAGE

SPECIAL HANDLING PROCEDURES AND EQUIPMENT: Wear gloves if handling concentrated product. Avoid contact with skin and eyes. Do not take internally.
STORAGE REQUIREMENT: Avoid freezing. Store in a cool dry area in a closed container.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT:
GLOVES: Impermeable Gloves EYE PROTECTION: Safety Goggles
FOOTWEAR: Water Resistant OTHER: Not required
RESPIRATORY PROTECTION: Not required for normal use VENTILATION
REQUIREMENTS: Local Ventilation

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|---|---|---|
| APPEARANCE: | Light Orange Colour/Citrus Aroma | S.G. / DENSITY (g/cc): | 0.86 |
| PH: (Concentrate): | not applicable | VAPOUR PRESSURE (mmHg): | not established |
| VAPOUR DENSITY (air=1): | not established | BOILING POINT: | >160°C |
| FREEZING POINT: | not available | EVAPORATION RATE (water=1): | <1 |
| SOLUBILITY IN WATER: | not soluble | | |

## 10. STABILITY AND REACTIVITY

INCOMPATIBILITY (Material to Avoid): Strong oxidizing agents STABILITY: Stable
HAZARDOUS DECOMPOSITION PRODUCTS: CO, $CO_2$, Smoke and unidentified organic compounds may be formed during combustion.
HAZARDOUS POLYMERIZATION: Not applicable REACTIVITY: Not dangerously reactive

## 11. TOXICOLOGICAL INFORMATION

LD50 (Calculated): >5000 mg/kg (dermal/rabbit) LC50 (Calculated): Not established

## 12. ECOLOGICAL INFORMATION

SPILL PROCEDURE: Pick up with mop or wet-vac.
WASTE DISPOSAL: Dispose according to municipal, provincial, and federal regulations

## 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Dispose according to municipal, provincial, and federal regulations

## 14. TRANSPORT INFORMATION

TDG: Not Regulated

## 15. REGULATORY INFORMATION

WHMIS CLASS: Not a WHMIS controlled product
CPR Compliance: This product has been classified in accordance with hazard criteria of the CPR and this MSDS contains all the information required by the CPR

## 16. OTHER INFORMATION

PREPARED BY: J. Brideau (800)267-5744
PREPARATION DATE: February 17, 2012
AMMENDED: February 9, 2015

Notice:
To the best of our knowledge, the information contained in this document is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Some of the information presented in this document is from sources other than direct test data on the substance itself. As the methods of storage and handling, use, and disposal of the product are beyond our control, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with storage and handling, use, or disposal of this product.
Final determination of suitability of this material is the sole responsibility of the user. Materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

# *APPENDIX E:*

ZINC PRIMER


## NF PN: 606945 & 638699



**General Industrial**
**Technical Data Sheet**

GANICIN™ 2.8 MC-U™ MOISTURE-CURED ZINC-RICH PRIMER

# Ganicin™ 2.8 MC-U Moisture-Cured Zinc-Rich Polyurethane Primer

## GENERAL

### DESCRIPTION

A high solids, two-component, 2.8 lbs/gal VOC conforming, moisture-cured organic zinc-rich coating based on Axalta polyurethane technology. The resulting coating is designed to be highly durable and to deliver outstanding corrosion resistance.

### SUGGESTED USES

As a high performance primer on carbon steel or as a touch-up for inorganic zinc coatings where:

- A coating with 85% zinc in the dried film with low VOC is required Spray
- application, or by brush when touch-ups may be necessary Application
- is recommended down to 35°F (2°C)
- No induction time and long pot life may improve productivity

Ganicin 2.8 MC-U is intended to be used as a primer and should be topcoated.

### COMPATIBILITY WITH OTHER COATINGS

Ganicin 2.8 MC-U Moisture-Cured Zinc-Rich Primer may be topcoated with Corlar® epoxies and/or Imron® polyurethane Primers. Do not apply Imron polyurethane topcoats, directly to Ganicin 2.8 MC-U. Ganicin 2.8 MC-U may also be used to touch up inorganic and organic zinc-rich coatings. Testing for lifting, bubbling and adhesion is recommended to assure compatibility with unknown coatings. Contact your Axalta representative for specific recommendations.

### NOT RECOMMENDED FOR

- Immersion service
- Exposure to acid or alkali environments without suitable topcoats

### PERFORMANCE PROPERTIES

Chemical Excellent
Humidity Excellent
Water spray Excellent

Weather Excellent with durable topcoat
(will chalk if left untopcoated)

### COLOR

Grey green

The products referenced herein may not be sold in your market. Please consult your distributor for product availability.

## MIXING

### COMPONENTS

63P1500 primer base 1 short fill gallon container (0.46 gallon) 347YB1500™
zinc dust 1 gallon container (13.4 lbs.)

### MIX RATIO

**Component Part by Volume**

63P1500 primer base 1 container short fill (0.46 gallon)
347YB1500 zinc dust 1 container (13.4 lbs.)

NOTE: Mixed amount will makes 0.70 gallon.





### ACTIVATION

Thoroughly stir 63P1500 primer, then slowly add 347YB1500 zinc dust with consistent agitation. After mixing, filter through a 40 mesh screen. Filter into an agitated spray pot. Constant agitation during application is recommended to prevent settling of zinc dust. Minimize contact with humid air.

### Reduction

No reduction should be necessary. However, if conditions require thinning, Axalta 8685S™ may be used up to 5 oz./gal. To remain @ 2.8 lbs/gal VOC, use no more than 2 oz/gal.

### APPLICATION THINNERS

Spray or brush: Axalta 8685S up to 2 oz./gal. may be added and still remain conforming at

2.8 lbs/gal VOC. Amounts up to 5 oz./gal. Max can be used if required for various application conditions. Use no alcohol-containing thinners.

### POT LIFE

At least 8 hours if moisture is excluded, shorter in high humidity and temperature.

## APPLICATION

### SURFACE PREPARATION

An SSPC-SP 6 Commercial Blast Cleaning is preferred for optimal performance. For touchup over inorganic zinc, Hand Tool Clean to an SSPC-SP 2 or Power Tool Clean to an

SSPC-SP 3 can be used. Note: You can prep surface by using 100 – 150 grit sand paper.

**APPLICATION CONDITIONS**

Do not apply if material, substrate or ambient temperature is below 35°F (2°C) or above 110°F (43°C). The substrate must be at least 5°F (3°C) above the dew point. Relative humidity should be below 90%.

For best results, apply by spray. Product can be brushed for small spot applications or repairs. Note that in high humidity, the coating will gradually accumulate on the brush. **BRUSH APPLICATION**

Manufacturer: Wooster China Bristle - 3”- 4” brush

**SPRAY APPLICATION**

Manufacturers listed below are a guide. Others may be used. Changes in tip size or pressure may be required to achieve proper application.

**Conventional Spray**
Binks DeVilbiss Spray
Gun: 2001 JGA

Fluid Nozzle: 67SS FF (1.4) Air
Cap: 67PR 704

**HVLP Spray**

Binks DeVilbiss

Spray Gun: Mach 1 GTi
Fluid Nozzle: 94 (1.4) 1.4
Air Cap: 94P 2000

**Airless Spray**

Pump: Graco Extreme 33:1
Airless Gun: Graco 946853
Fluid Hose: 3/8" x 100' max

Tips: 415-517RAC

Minimum pressure to avoid fingering: 2400 psi min.



## General Industrial

**Technical Data Sheet**

GANICIN™ 2.8 MC-U™ MOISTURE-CURED ZINC-RICH PRIMER

**Application Notes**

- Must be agitated during application.
- For conventional air spray, fluid lines should be 0.5” inner diameter and 25-50’ long maximum.
- For best results, keep pressure pot at the same height as the work.
- Apply a full, wet coat. Try not to exceed specified film build thickness.

**CLEAN UP THINNERS**

Axalta 8685S

## DRY TIMES

Cure time at recommended thickness 3 mils DTF @ 50% RH

**77°F (25°C)**

To touch 30 minutes
Re-coat 2 hours

Handle 3-4 hours

Note: May be overcoated with itself up to 3 days (72 hours) after initial application.

## PHYSICAL PROPERTIES

Maximum Service Temperature 250°F (121°C) in continuous service 350°F (177°C) in intermittent service

Volume Solids 62% ± 2%

Weight Solids 89% ± 2%

Theoretical Coverage Per Gallon 994 ft² (24.4 m²/L) @ 1 mil DFT 330 ft² (8.1 m²/L) @ 3 mils DFT

Material losses during mixing and application will vary and must be taken into consideration when estimating job requirements.

Weight Per Gallon 24.8 lb average | 11.2 kg. average

Shipping Weight (approximate) 1 gallon container: liquid 3.8 lbs | zinc 13.4 lbs Suggested
Film Thickness 5 mils (125 µm) wet

3 mils (75 µm) dry

Application by brush and roller may require additional coats to achieve recommended films thickness.

Flash Point: (Tag Closed Cup) 100°F (38°C) Gloss
Flat

Package Size 1 container
Shelf Life 1 year minimum

### STORAGE CONDITIONS

Store in a dry, well-ventilated area. Storage conditions should be between -30°F (-34°C) and 120°F (48°C).

Moisture-cured zinc-rich primer liquid may settle. Agitate before each use. To prevent pressure build-up after mixing, do not store in sealed containers.

## VOC REGULATIONS

VOC (Theoretical, varies with color).

Moisture cured zinc-rich primer; unreduced 2.76 lbs/gal (332 g/l)

These directions refer to the use of products which may be restricted or require special mixing instructions in VOC regulated areas. Follow mixing usage and recommendations in the VOC Compliant Products Chart for your area.

## ASTM INFORMATION

Physical properties are for Ganicin 2.8 MC-U Moisture-Cured Zinc-Rich Primer. For othersystem results, contact Axalta Coating Systems. Paint System: Ganicin 2.8 MC-U

Type | Color: Moisture-cure organic zinc-rich |Gray green
DFT: 2.8 mils

Salt Fog (ASTM B117) 1000 hours no rusting, no blisters 2000 hours no rusting, no blisters

3000 hours no rusting, few #8 blisters at the scribe, no undercutting

at the scribe

Relative Humidity (ASTM D2247) 1000 hours no rusting, no blisters 2000 hours no rusting, no blisters

3000 hours no rusting, no blisters

Dry Heat (ASTM D2485) 250°F for 24 hours no cracking, no blisters, moderate loss of

adhesion, no discoloration

Electrical Resistance: $1x10_{10}$ (OHMS)

Adhesion (ASTM D4541): 2406 psi cohesive failure within the coating

Cleveland Cond (ASTM D4585): 1000 hours no rusting, no blisters UV Con (ASTM D4587)* 3000 hours Gloss before exposure: 2 Gloss after exposure: 0.9

Evaluation no rusting, no blisters, no delamination

Mandrel Bend (ASTM D522): % Elongation – 5-10% (on smooth eCoat) Taber Abrasion (ASTM D4060): weight loss in grams - 0.14

*8 hr UV @ 122°F (50°C), 4 hr condensation @ 104°F (40°C), gloss readings @ 60°

## SAFETY AND HANDLING

For industrial use only by professional, trained painters. Not for sale to or use by the general public. Before using, read and follow all label and MSDS precautions. If mixed with other components, mixture will have hazards of all components.

Ready to use paint materials containing isocyanates can cause irritation of the respiratory organs and hypersensitive reactions. Asthma sufferers, those with allergies and anyone with a history of respiratory complaints must not be asked to work with products containing isocyanates.

Do not sand, flame cut, braze or weld dry coating without a NIOSH approved air purifying respirator with particulate filters or appropriate ventilation, and gloves.



**Revised: June 2015**

**In the United States:**
**1.855.6.AXALTA**
**axalta.us**

**In Canada:**
**1.800.668.6945**
**axalta.ca**

# *APPENDIX F:*

**UNDERCOATING**


NF PN: 606947



## Transportation

**Technical Data Sheet**

TUFCOTE™ UC-1000™

# Tufcote™ UC-1000™
# Waterborne Chip Resistant Undercoat

## GENERAL

### DESCRIPTION

A single-component, waterborne, zero VOC, semi-firm coating designed to deliver premium performance to resist chipping, scratches and gravel marks for use on the underbody of truck, trailer, bus, body builder and other transit vehicles. It is formulated to provide excellent adhesion, hardness and may be applied at film thickness up to 15 mils. It is available in three factory packaged colors: black, off-white, and grey.

### SUGGESTED USES

. Recommended for use on underbody of truck, trailer, bus, body builder and other transit

vehicles where premium quality attributes for corrosion prevention and chip resistance are desired.

· Formulated to provide excellent adhesion, hardness and durability to most substrates including primers, e-coat and oily steel.

### COMPATIBILITY WITH OTHER COATINGS

· Compatible with most urethane, acrylic or alkyd resin formulated transportation quality topcoats

### COLOR

UC-1001™ Black
UC-1003™ Grey
UC-1006™ White

## MIXING

### COMPONENT

Tufcote UC-1000 Waterborne Chip Resistant Undercoat

### MIX RATIO

Mixing or thinning not required. Mild agitation is recommended prior to use.

### ADDITIVES

None recommended.

DO NOT THIN. Incorrect thinning will affect film build, dry time and product performance.

## APPLICATION

### SURFACE PREPARATION

The maximum performance of Tufcote UC-1000 can be achieved only when the metal surfaces to be protected are clean, dry, and free of rust, oil, and mill scale.

### APPLICATION CONDITIONS

Do not apply if material, substrate or ambient temperature is less than 50°F (10°C) or above 95°F (35°C) at the time of product application.

### APPLICATION EQUIPMENT

Airless spray
Dip



## Transportation

**Technical Data Sheet**

TUFCOTE™ UC-1000™

### APPLICATION

- Tufcote UC-1000 is formulated to be used as supplied.
- Ensure uniform consistency prior to use. Continued stirring is generally not required.
- If the product thickens due to cold storage or loss of water and coalescing solvent during use, contact an Axalta representative.
- DO NOT THIN. Incorrect thinning will affect film build, dry time and product performance.
- Recommended ambient and product temperature should be 50 - 95ºF (10 - 35ºC) at time of application.
- Product can be airless spray or dip applied.

### RE-COAT

- Tufcote UC-1000 may be recoated with most urethane, acrylic or alkyd resin formulated transportation topcoats.

### REMOVAL

The dry film is not normally intended for removal. The product can be repainted after the film is cured. Citrus or alkaline cleaner will remove fresh residue accumulated on application equipment. If removability is a factor, contact an Axalta representative.

### CLEAN UP SOLVENTS

Citrus or alkaline cleaner

## DRY TIMES

Approximate Dry Time At Recommended Thickness @ 77°F (25°C) Air dry
30 – 60 minutes

Cure Time 72 hours

- Adequate ventilation is required for cure and to ensure against formation of a combustible liquid atmosphere.
- THE PARTIALLY CURED FILM SHOULD NOT BE EXPOSED TO IGNITION SOURCES SUCH AS FLARES, FLAMES, SPARKS, EXCESSIVE HEAT, OR TORCHES.
- Refer to product Material Safety Data Sheet for additional handling and first aid information.

## PHYSICAL PROPERTIES

UC-1001 UC-1003 UC-1006

Black Grey White

Density, Weight/Gallon @ 77ºF (25ºC) 10.5 ± 0.1 lbs 10.9 ± 0.1 lbs 10.9 ± 0.1 lbs
Recommended Dry Film Thickness

over Metal Profile 10 - 15 mils 10 - 15 mils 10–15 mils

Dry Film Thickness Over Primed Steel 6 – 8 mils 6 – 8 mils 6 – 8 mils Theoretical Coverage @ Rec. DFT 48-73 ft²/gallon 75-95 ft²/gallon 80 ft²/gal Non-Volatile % by Weight 55 ± 2 56 ± 2 54 ± 2

Non-Volatile % by Volume 45 ± 2 42 ± 2 50 ± 2
Gloss Matte

Shelf Life 12 months minimum

Gravelometer, -20°C, SAE J-400, Pass, Excellent Rating GM-998-4247, GM9508P No Adhesion Loss

## Transportation

**Technical Data Sheet**

TUFCOTE™ UC-1000™

### STORAGE CONDITIONS

Store in a dry, well-ventilated area. Storage conditions should be between 50°F (10°C) and 95°F (35°C). Mild agitation is recommended prior to use.

Do not allow product to freeze.

## ASTM INFORMATION

5% Salt Spray (Hours) at 15 mils DFT

ASTM B-117 @ 6 to 10 Recommended DFT 2000
(2x4x1/8 in. CRS Panels)

100% Relative Humidity (Hours)

ASTM D-1748 @ Recommended DFT 1000
(2x4x1/8 in. CRS Panels)

## VOC REGULATIONS

Volatile Organic Content (VOC) 0 lbs. / gallon

## SAFETY AND HANDLING

For industrial use only by professional, trained painters. Not for sale to or use by the general public. Before using, read and follow all label and MSDS precautions. If mixed with other components, mixture will have hazards of all components.

Ready to use paint materials containing isocyanates can cause irritation of the respiratory organs and hypersensitive reactions. Asthma sufferers, those with allergies and anyone with a history of respiratory complaints must not be asked to work with products containing isocyanates.

Do not sand, flame cut, braze or weld dry coating without a NIOSH approved air purifying respirator with particulate filters or appropriate ventilation, and gloves.

All technical advice, recommendations and services are rendered by the Seller gratis. They are based on technical data which the Seller believes to be reliable, and are intended for professional use by persons having skill and know-how at their own discretion and risk. Seller assumes no responsibility for results obtained or damages incurred from their use by Buyer in whole or in part. Such recommendations, technical advice or services are not to be taken as a license to operate under or intended to suggest infringement of any existing patent.

**Revised: February 2015**

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AXALTA

# *Appendix G*

***Painting Large Open and Hard to Access Surfaces Showing Rust:***

## RUST BULLET® COATINGS APPLICATION GUIDELINES

**Rust Bullet® Standard, Rust Bullet® Automotive, ColorShell™, BlackShell®, WhiteShell™, Clear Shot™**

**The Rust Bullet® Standard and the Rust Bullet® Automotive Formula's Patented New Technology provide superior corrosion control and protection. To ensure you achieve the best possible results, it is extremely important that these Application Guidelines are read thoroughly before use. Please refer to the most current Application Guidelines available at www.RustBullet.com or by calling Rust Bullet Customer Support at 800-245-1600.**

### SURFACE PREPARATION

The proper surface preparation prior to applying Rust Bullet coatings will ensure optimum performance. The surface must be completely dry and free of loose rust or paint, surface contaminates such as dirt, oily substances, salts, etc. Remove by lightly scraping, sanding or wire brushing. Use Rust Bullet Metal Blast for metal surface cleaning and conditioning prior to application when necessary. Do not use any other chemical for surface prep prior to application without consulting Rust Bullet Technical Support. Scuff up existing paint or coatings that cannot easily be removed with 100-150 grit sandpaper. This rule also applies to a previous coat of a Rust Bullet coating if 24 hours have lapsed between coats. No additional surface preparation should be necessary.

### PRODUCT PREPARATION

IMPORTANT: FAILURE TO FOLLOW STIRRING PROCEDURE BELOW MAY RESULT IN POOR COATING PERFORMANCE

Do not open and stir a Rust Bullet coating when the coating's temperature is below 32°F (0°C). Rust Bullet coatings must be stirred thoroughly until completely uniform and homogeneous (approximately 3 minutes), increase time if product has settled. Do not shake or use electric or mechanical mixing devices that may whip air into the product. Use Rust Bullet Solvent for thinning if necessary (ratio of 3% - 5% by volume).

### APPLICATION

Rust Bullet coatings may be applied by brush, roller, or spray equipment. Refer to Application Methods at www.RustBullet.com for application equipment details. All Rust Bullet coatings theoretical coverage is approximately 400 square feet per gallon/per coat depending on the method of application and the surface to be coated. It is critical that Rust Bullet be applied to achieve at least a 6 mil dft (0.006 inches or 0.1524 millimeters), usually a 2-3 coat application. A minimum 12 mil dft is required for industrial, commercial and marine applications. The first coat must be generous enough to soak through the rust to the steel or iron beneath with a second coat of Rust Bullet applied to completely seal the first coat; this cannot be done with any other coating material, including Rust Bullet ColorShell, BlackShell, WhiteShell, or Clear Shot. Optimum drying time between coats of a Rust Bullet coating is approximately 2 to 6 hours. Cure time varies based on relative humidity and temperature of the surface. When applying additional coats of Rust Bullet, the previous coat should be dry to the touch and not wet or tacky; if there is no transfer of coating to a gloved finger it is safe to apply an additional coat. Subsequent coats of Rust Bullet should be applied within 4 to 6 hours after the previous coat. If 6 or more hours have lapsed, wait for Rust Bullet to harden for at least 24 hours then lightly scuff with 150 grit; enough to break the glaze to create a surface profile. The same procedure applies when using a topcoat that is not a Rust Bullet coating. With all topcoat paints it is advised to check for compatibility and follow the manufacturer's recommendations. If applying Rust Bullet ColorShells, BlackShell, WhiteShell, or Clear Shot independent of Rust Bullet Standard or Rust Bullet Automotive, a two-coat application is required. Recommended air or surface temperature should not be below 35°F (2°C) or above 110°F (43°C). Ideal application temperature is between 50°F (10°C) and 80°F (27°C) with humidity below 90%. Never apply a Rust Bullet coating while raining or under threat of rain. Do not apply to surfaces when existing temperature of the surface exceeds 190°F (90°C) or is below 32°F (0°C). After fully cured, Rust Bullet coatings have a service temperature range of 314°F (157°C) continuous, and can tolerate maximum temperature between 617°F - 662°F (325°C – 350°C) for up to 72 hours.

### CLEAN-UP, PRODUCT STORAGE AND HANDLING

Use Rust Bullet Solvent for cleanup. If Rust Bullet Solvent is unavailable, xylene, toluene or acetone may be substituted. Rust Bullet residue will harden, destroying equipment if not cleaned immediately. Partially used containers may be resealed using Bloxygen to prevent curing for up to six months. Limit the time the container is opened. Immediately wipe clean any coating from the rim of the container before resealing. Never pour a Rust Bullet coating that has been exposed to air or moisture back into the container. If a skin has formed in a new unopened container or a sealed container, remove by cutting edge of skin at the skin/container surface. Discard of the skin properly. Stir until uniform, filter if necessary and apply. Rust Bullet coatings are packaged in unlined paint cans. If the coating is transferred to another container, a clean unlined paint can (or similar unlined metal container) must be used. Unopened cans have a shelf life of approximately two (2) years. The shelf life of opened cans *not* re-sealed using Bloxygen is approximately one month.

### SAFETY CONSIDERATIONS

Use with adequate ventilation, and if necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states. IMPORTANT: Protective clothing, gloves, and eye protection are recommended during set-up, application and cleanup; it is extremely difficult to remove Rust Bullet coatings from skin after about 10 minutes. Avoid open flames, pilot lights, sparks, heating elements, cigarettes, or any and all possible sources of ignition. ***For more complete coverage of safety issues refer to the GHS SDS at www.RustBullet.com.***



*Rust Bullet LLC | 300 Brinkby Avenue, Suite 200 | Reno, NV 89509 USA | 800-245-1600 | 775-829-5606*

*www.RustBullet.com*

# *APPENDIX H*

## ***LEVEL 1 INSPECTION DOCUMENT***

### Level 1 Inspection Checklist for Corrosion Prevention

Service Year Date

SR # _____ 12 Year Requirement

Bus # _____ Year 2:_____Year 4:_____Year 7:_____Year 10: _____

Mileage # _____ Year 3:_____Year 5:_____Year 8:_____Year 11: _____

Year 4:_____Year 6:_____Year 9:_____Year 12: _____

Type of bus (Circle): Xcelsior (35, 40 & 60) 18 Year Requirement (if applicable)

& LF/LFR (35, 40 & 60) Year 14:_____Year 16: _____

Note: Walk around inspection to be completed on bus for the exterior and the underbody for any damage.

Comments:

- ☐ Damage to the exterior of the bus YES/NO _____
- ☐ Damage to any components on u/body YES/NO _____

Note: For customers operating in more severe locations (salt belt area), it is recommended to complete every 12 months.

For "best practices", the following items need to be inspected and addressed. Upon completion of this process every 24 months, this will provide assurance that the PM was completed on vehicle to meet/maintain corrosion warranty requirements.

**BOROSCOPE INSPECTION**

*Tubes that must be inspected are all outside rails along the bottom of the chassis. Random tubes throughout the bottom of the bus can be audited. Provide notes on findings. This will allow to review the areas the following year to see if the condition of the tube has changed.* Mark an **"X"** on the area inspected and record a **"number"** next to it on the diagram. Notes can then be provided to state the condition of the surface inside the tube. The following conditions can be used: **No Rust; mild rust; medium rust & heavy/severe rust.**

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

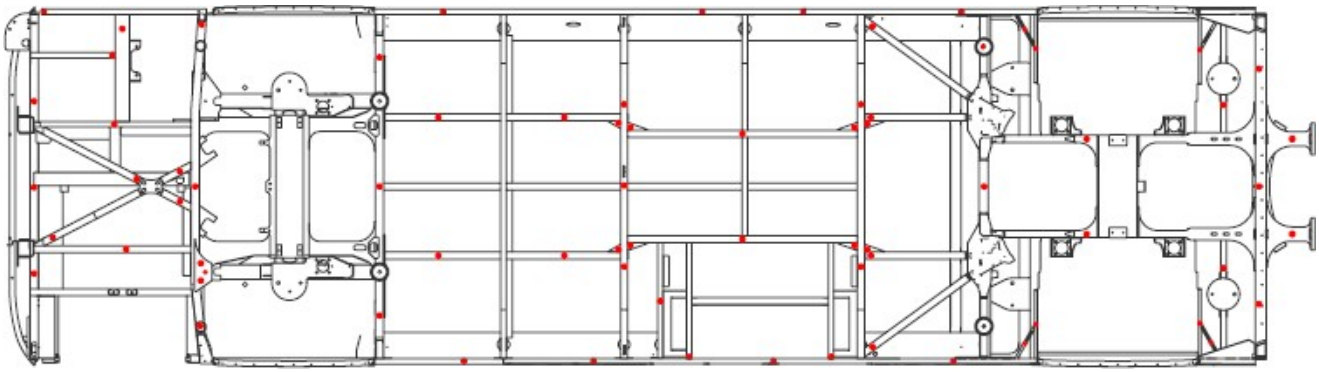
13. _____

14. _____

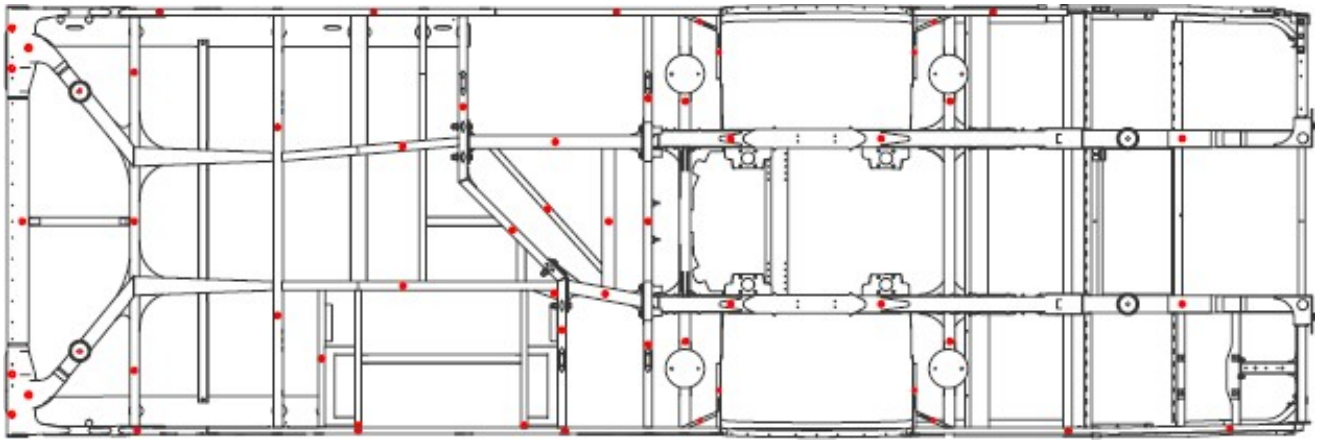
15. _____

### *Front Chassis*

Mark **"X"** with a **"1" (so forth)** next to the location to identify the condition inside the tube. Also note any areas that see heavy corrosion on the outside of the tubes.



### *Rear Chassis*



| Note: Follow steps as shown. | Completed (check off) | Initials |
|---|---|---|
| 1. Drain holes must be cleaned and not plugged with debris. Vertical tubes must be cleaned out. | | |
| 2. If plugs already exist at the drain holes, remove the plugs (set aside to re-use), blow compressed air into the holes to drive out moisture. Re-install plugs once application of Krown T-40 is completed. | | |
| 3. Road salt/debris/sand/mud must be removed from all ledges/channels & top of tubes. | | |
| 4. "Power Kleen" or equivalent degreaser to be used on area's that exhibit heavy grease & oil stains. Especially areas like hoses and fittings that are "caked" with dirt and grease. | | |
| 5. Use "Krown" Salt Eliminator at following locations:<br>- Entire underbody chassis (Including top surfaces, gusset faces, ledges, welded corners, sealed areas, inside all structure tubes & vertical tubes<br>- Power steering area under drivers platform<br>- Front/Rear bumper area<br>- Front/Rear suspension & components<br>- Battery compartment (inside of tray & Exterior of compartment)<br>- Radiator cleaning<br>- Engine and transmission<br>- Inside the bellow area (under the artic joint) Note: Only for 60 foot buses.<br>- If bus has impact panels, remove the impact panels to apply product on brackets (both on interior and exterior). | | |
| 6. Remove rust staining at following locations: around drain holes; ledges/edges on tubes; welded corners on tubes; horizontal & vertical surface. | | |
| 7. Pressure wash entire underbody to rinse the chassis/underbody. | | |
| 8. Inspect & touch up area's that have bare metal with zinc primer (OEM standard) or use Rust Bullet (alternative product) for areas with rust. | | |
| 9. Check all lap joints. Any lap joint with missing sealant must be cleaned & re-sealed. | | |
| 10. Touch up undercoating on underbody | | |
| 11. Apply Krown T-40 corrosion product inside all tubes & vertical channels, and engine header tube. This will also include a chassis spray with T-40 product. This will also include the Artic Joint area from below. | | |
| 12. Inspect electrical connectors for loose connectors, damaged electrical wires, and broken seals. Repair as required. | | |
| 13. T-40 can be used on all electrical applications to prevent/reduce corrosion by driving out moisture. Reference TSIB 15-04 | | |
| 14. Inspect for damaged components that need to be repaired or replaced. | | |

| | | |
|---|---|---|
| 16. Inspect roof top area on the bus. Clean up debris and touch up rusted areas as required. | | |
| 17. Check for paint chips/gouges or corrosion on exterior of the bus. If this exists, schedule for repair to avoid future corrosion issues. | | |
| 18. Inspect the rear A/C compartment shelf for any residue and debris buildup. Ensure that no water is entering and all connectors are dry. If dust ejector installed, ensure that ejector is clean and will allow water to drain out. | | |
| 19. Inspect plastic plugs on underbody for cuts/tears, missing sealant or missing plugs. If damaged or missing, install new plug (PN: 6469822 & 6469823). | | |
| 20. Clean out and spray the area under the artic joint inside the bellow area. | | |

| LABOUR ESTIMATE | | | | |
|---|---|---|---|---|
| | Operation | Men | Hours | Labour Time M X HR |
| 1 | Remove impact panels, inspection & borescope structure tubes. | 1 | 1.25 | 1.25 |
| 2 | Cleaning procedure (including Enviro Solve) | 1 | 3.5 | 3.5 |
| 3 | Surface prep for Rust Bullet (if required) | 1 | 0.25 | 0.25 |
| 4 | Application of Rust Bullet (if required) | 1 | 1 | 1 |
| 5 | Clean out debris and treat area below artic joint (inside bellow area). | 1 | 0.5 | 0.5 |
| 6 | Application of T-40 | 1 | 1.75 | 1.75 |
| 7 | Plugging of drain holes | 1 | 0.25 | 0.25 |
| 8 | Clean-up & including re-installing impact panels | 1 | 1.50 | 1.50 |

Total: 10 hours

(*) This labor time will decrease by 1 hour if there is no impact panels.

| PARTS REQUIRED | | | | | |
|---|---|---|---|---|---|
| Item | Part Number | Description | Qty. per Coach | Units | Notes |
| 1 | 606947 | Undercoat | 0.25 | GA | |
| 2 | 055701 | Sealant 221 White | 0.5 | EA | |
| 3 | 606945 | Primer Zinc | 0.2 | GA | |
| 4 | 638699 | Primer Zinc Powder | 0.2 | GA | |
| 5 | 6469822 | 9/16” Plastic plugs (only required on 1st application) | 65 | EA | |
| 6 | 34S00024 | Screw – No.10-24 x 1.5 | 0 | EA | *1 |
| 7 | 30W00000 | Washer Lock No. 10 | 0 | EA | *1 |
| 8 | 6465141 | Krown T-40 | 6 | L | |
| 9 | 6465149 | Krown Salt Eliminator | 5 | L | |
| 10 | 6465150 | Enviro Solve | 0.25 | L | |
| 11 | 597554 | Foam-Impact Panel Plug (only required on 1st application) | 34 | EA | *1 |

| | | | | | |
|---|---|---|---|---|---|
| 12 | 6470050 | Rust Bullet Standard | 0.25 | QT | As req'd |
| 13 | 6469823 | 1.09" Plastic plug | 0 | EA | As req'd |
| 14 | NPN | Xylene Solvent (Klean Strip) or MEK solvent | 2 | L | Purchase locally |
| 15 | NPN | Mineral Green or equivalent degreaser | 1 | QT | Purchase locally |
| 16 | 6469821 | 7/16" plastic plug | | EA | As required |

- 1) Only order if hardware is damaged.
- **Note: When using Rust Bullet with airless spray gun, to thin out material as specified, use only Xylene or MEK solvent only – no other alcohol based product can be used.**

| SPECIAL TOOLS REQUIRED | | | | | |
|---|---|---|---|---|---|
| Item | Part Number | Description | Qty. per Coach | Units | Notes |
| 1 | | ***See all info on tools and products from Krown in appendix. Pressure washer & borescope.*** | | | |